



**Pacific Gas and  
Electric Company**

**Curt Russell**  
Topock Onsite Project Manager  
GT&D Remediation

Topock Compressor Station  
145453 National Trails Hwy  
Needles, CA 92363

*Mailing Address*  
P.O. Box 337  
Needles, CA 92363

760.326.5582  
Fax: 760.326.5542  
Email: [gcr4@pge.com](mailto:gcr4@pge.com)

May 15, 2007

Robert Perdue  
Executive Officer  
California Regional Water Quality Control Board  
Colorado River Basin Region  
73-720 Fred Waring Drive, Suite 100  
Palm Desert, CA 92260

**Subject: Board Order R7-2006-0060  
PG&E Topock Compressor Station, Needles, California  
Interim Measure No. 3 Groundwater Treatment System  
Discharge to Injection Wells  
April 2007 Monitoring Report**

Dear Mr. Perdue:

Enclosed is the April 2007 Monitoring Report for the Pacific Gas and Electric Company (PG&E) Topock Compressor Station, Interim Measure (IM) No. 3 Groundwater Treatment System.

This report is being submitted in compliance with the Waste Discharge Requirements (WDRs) issued September 20, 2006 by the Colorado River Basin Regional Water Quality Control Board (Water Board) under Order R7-2006-0060. The WDRs apply to IM No. 3 Treatment System discharge by subsurface injection.

The approved site Monitoring and Reporting Program (MRP), section I. A. 2 requires that PG&E follow the EPA -required testing methods found in 40 CFR Part 136. EPA changed the EPA-required test methods for total dissolved solids (TDS) and pH on April 11, 2007. Therefore, the April 2007 Laboratory Reports include data from both new and previous methods depending on the sample analysis date. TDS was previously analyzed by method EPA 160.1, and is now analyzed by method SM 2540 C. The pH was previously analyzed by method EPA 150.1, and is now analyzed by method SM 4500-H B.

If you have any questions regarding this report, please call me at (760) 326-5582.

Sincerely,

A handwritten signature in dark ink, appearing to read 'C. Russell', is written over a light gray, textured background.

Curt Russell  
Topock Onsite Project Manager

Enclosures:

April 2007 Monitoring Report for the IM No. 3 Groundwater Treatment System.

cc: Abdi Haile, Water Board  
Cliff Raley, Water Board  
Tom Vandenberg, Water Board  
Aaron Yue, DTSC

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# **April 2007 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System**

## **Waste Discharge Requirements Board Order No. R7-2006-0060 PG&E Topock Compressor Station Needles, California**

Prepared for  
**California Regional Water Quality Control Board  
Colorado River Basin Region**

on behalf of  
**Pacific Gas and Electric Company**

May 15, 2007

**CH2MHILL**  
155 Grand Avenue, Suite 1000  
Oakland, CA 94612

**April 2007 Monitoring Report  
Interim Measure No. 3 Groundwater Treatment System  
Waste Discharge Requirements Order No. R7-2006-0060  
PG&E Topock Compressor Station  
Needles, California**

Prepared for  
Pacific Gas and Electric Company

May 15, 2007

**This report was prepared under the supervision of a  
California Certified Professional Engineer**

*Dennis Fink*

Dennis Fink, P.E. No. 68986  
Project Engineer





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# Acronyms and Abbreviations

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EPA	U.S. Environmental Protection Agency
gpm	gallons per minute
HMI	human-machine interface
IM	Interim Measure
MRP	Monitoring and Reporting Program
PG&E	Pacific Gas and Electric Company
PLC	programmable logic controller
PST	Pacific Standard Time
STL	Severn Trent Laboratories, Inc.
TOC	total organic carbon
Truesdail	Truesdail Laboratories, Inc.
Water Board	California Regional Water Quality Control Board, Colorado River Basin Region
WDR	Waste Discharge Requirements

# 1.0 Introduction

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Pacific Gas and Electric Company (PG&E) is implementing an Interim Measure (IM) to address chromium concentrations in groundwater at the Topock Compressor Station near Needles, California. The IM consists of groundwater extraction for hydraulic control of the plume boundaries in the Colorado River floodplain and management of extracted groundwater. The groundwater extraction, treatment, and injection systems collectively are referred to as IM No. 3. Figure 1 provides a map of the project area. All figures are located at the end of this report.

California Regional Water Quality Control Board, Colorado River Basin Region (Water Board) Board Order No. R7-2006-0060 authorizes PG&E to inject treated groundwater into injection wells located on San Bernardino County Assessor's Parcel No. 650-151-06. Order No. R7-2006-0060 was issued September 20, 2006, and is the successor to Order No. R7-2004-0103. The Monitoring and Reporting Program (MRP) under the order requires monthly monitoring reports to be submitted by the fifteenth day of the following month.

**This report covers monitoring activities related to operation of the IM No. 3 groundwater treatment system during April 2007.** The groundwater monitoring results for wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D will be submitted under separate cover, as part of the Compliance Monitoring Program.

## 2.0 Sampling Station Locations

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Table 1 lists the locations of sampling stations. (All tables and figures are located at the end of this report.) Sampling station locations are provided in the process and instrumentation diagrams: Figures TP-PR-10-10-04, TP-PR-10-10-08, and TP-PR-10-10-06.

## 3.0 Description of Activities

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The treatment system was initially operated between July 25 and July 28, 2005 for the WDR-mandated startup phase. Discharge to the injection wells was initiated July 31, 2005 after successfully completing the startup phase in accordance with Order R7-2004-0103. Full-time operation of the treatment system commenced in August 2005.

Influent to the treatment facility, permitted by Order R7-2006-0060 (successor to Order R7-2004-0103), includes the following components:

- Groundwater from extraction wells TW-2S, TW-2D, TW-3D, and PE-1.
- Purged groundwater and water generated from rinsing field equipment during monitoring events.
- Groundwater generated during well installation, well development, and aquifer testing.

During April 2007, extraction wells TW-3D and PE-1 operated at a target pump rate of 135 gallons per minute (gpm) excluding periods of planned and unplanned downtime (planned and unplanned downtime is described in Section 4.0).

Operation of the groundwater treatment system results in the following three out-flow components:

- **Treated Effluent:** Treated water that is discharged to the injection well(s).
- **Reverse Osmosis Concentrate (brine):** Treatment byproduct that is transported and disposed of offsite at a permitted facility.
- **Sludge:** Treatment byproduct that is transported offsite for disposal at a permitted facility. Disposal occurs each time a sludge waste storage bin reaches capacity or within 90 days of the start date for accumulation in the storage container.

## 4.0 Groundwater Treatment System Flow Rates

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The April 2007 treatment system monthly average flow rates (influent, effluent, and reverse osmosis concentrate) are presented in Table 2.

The system influent flow rate was measured by flow meters at groundwater extraction wells TW-2S, TW-2D, TW-3D, and PE-1 (Figure TP-RP-10-10-03). The treatment system effluent flow rate was measured by flow meters in the piping into injection well IW-2 and IW-3 (Figure TP-RP-10-10-11). The reverse osmosis concentrate flow rate was measured by a flow meter at the piping carrying water from reverse osmosis concentrate tank T-701 to the truck load-out station (Figure TP-RP-10-10-08).

The IM No. 3 facility treated approximately 4,492,972 gallons of extracted groundwater during April 2007. The IM No. 3 facility also treated approximately 4,450 gallons of water generated from the groundwater monitoring program during April 2007. Two containers of solids from the IM No. 3 facility were taken offsite during April 2007.

Periods of planned and unplanned extraction system downtime (that together resulted in 22 percent downtime during April 2007) are summarized below. The times shown are in Pacific Standard Time (PST) to be consistent with other data collected (e.g., water level data) at the site.

- **April 5 and 6, 2007 (unplanned):** The extraction well system was offline on April 5<sup>th</sup> from 2:18 am until 4:35 am; 12:14 pm until 12:29 pm; and on April 6<sup>th</sup> from 2:05 am until 2:32 am. The downtime was needed to replace a ferrous chloride feed pump that failed with an onsite spare, and subsequently to remove debris that accumulated in the newly installed pump after the new pump was started. Extraction system downtime was 2 hours 59 minutes.
- **April 11, 2007 (unplanned):** The extraction well system was temporarily offline from 3:46 pm until 3:49 pm to switch to generator power after a Needles Power outage. Extraction system downtime was 3 minutes.
- **April 12, 2007 (unplanned):** The extraction well system was temporarily offline from 7:21 am until 7:23 am to return operations from generator power to Needles Power. Extraction system downtime was 2 minutes.
- **April 16, 2007 (unplanned):** The extraction well system was temporarily offline from 7:00 am until 7:10 am due to a short-term power imbalance with Needles Power. Extraction system downtime was 10 minutes.
- **April 18, 2007 (unplanned):** The extraction well system was temporarily offline from 11:28 am until 11:37 am due to a power imbalance with Needles Power, which resulted in switching operations to generator power. Extraction system downtime was 8 minutes.

- **April 21, 2007 (unplanned):** The extraction well system was temporarily offline from 11:00 am until 11:02 am to return operations from generator power to Needles Power. Extraction system downtime was 2 minutes.
- **April 22, 2007 through April 28, 2007 (planned):** The extraction well system was completely shut down at 11:03 am on April 22, 2007 to begin a planned facility outage for annual maintenance. Work activities included pipe and tank visual inspections and cleaning, equipment maintenance, and general repairs. The extraction well system was re-started on April 28, 2007 at 11:10 pm during the facility re-start. A treated water sample was collected April 28, 2007 (from the SC-702 sampling location) during the re-start and tested at an offsite laboratory for confirmation that the treated water was within effluent limits before discharging to the injection wells. Extraction System Downtime was 156 hours, 7 minutes.



## 5.0 Sampling and Analytical Procedures

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All samples were collected at the designated sampling locations and placed directly into containers provided by Truesdail Laboratories, Inc. (Truesdail) or Severn Trent Laboratories, Inc. (STL). Sample containers were labeled and packaged according to standard sampling procedures.

The samples were stored in a sealed container chilled with ice and transported to Truesdail or STL via courier service under chain-of-custody documentation. The laboratories confirmed the samples were received in chilled condition upon arrival.

Truesdail is certified by the California Department of Health Services (Certification No. 1237) under the State of California's Environmental Laboratory Accreditation Program. STL is certified by the California Department of Health Services (Certification No. 1118) under the Environmental Laboratory Accreditation Program.

All analyses were performed in accordance with the latest edition of the "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 Code of Federal Regulations Part 136), promulgated by the United States Environmental Protection Agency.

The approved site Monitoring and Reporting Program (MRP), section I. A. 2 requires that PG&E follow the U.S. Environmental Protection Agency (EPA)-required testing methods found in 40 CFR Part 136. EPA changed the EPA-required test methods for total dissolved solids (TDS) and pH on April 11, 2007. Therefore, the April 2007 Laboratory Reports include data from both new and previous methods depending on the sample analysis date. TDS was previously analyzed by method EPA 160.1, and is now analyzed by method SM 2540 C. The pH was previously analyzed by method EPA 150.1, and is now analyzed by method SM 4500-H B.

As required by the MRP, the analytical method selected for total chromium has a method detection limit of 1 part per billion, and the analytical method selected for hexavalent chromium has a method detection limit of 0.2 part per billion.

Influent, effluent, reverse osmosis concentrate, and sludge sampling was conducted in accordance with the sampling frequency required by the MRP. The sampling analytical results are shown in Tables 3, 4, 5, and 6, respectively.

Groundwater quality is being monitored in observation and compliance wells according to Order R7-2006-0060, and the procedures and schedules approved in the *Groundwater Compliance Monitoring Plan for Interim Measures No. 3 Injection Area* submitted to the Water Board on June 17, 2005. Quarterly groundwater monitoring analytical results for the injection area (wells OW-1S/M/D, OW-2S/M/D, OW-5S/M/D, CW-1M/D, CW-2M/D, CW-3M/D, and CW-4M/D) are reported in a separate document, in conjunction with groundwater level maps of the same monitoring wells.

## 6.0 Analytical Results

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Laboratory reports for samples collected in April 2007 were prepared by certified analytical laboratories, and are presented in Appendix A. The April 2007 analytical results from groundwater treatment system influent, effluent, reverse osmosis concentrate, and sludge samples are presented in Tables 3, 4, 5, and 6, respectively.

In accordance with the WDR reporting requirements, the following sampling frequency schedule was followed:

- The influent was sampled monthly; the sample date was April 4, 2007. Results are presented in Table 3.
- The effluent was sampled weekly; the sample dates were April 4, 12, 18, and 30, 2007. Results are presented in Table 4. As described in Section 4.0, the facility was shut down from April 22, 2007 until April 28, 2007 to complete annual maintenance. No effluent samples were collected during this time. A treated water sample was collected April 28, 2007 from a non-WDR specified sampling location (identified as SC-702 located on the line into the T-700 Treated Effluent Tank) during re-start after the planned maintenance and tested at an offsite laboratory for confirmation that the treated water was within effluent limits before discharging to the injection wells. This sample was tested at an offsite laboratory and the results are included in the laboratory reports provided in Appendix A of this report. The results did not exceed WDR-specified effluent limitations for pH, total chromium, or hexavalent chromium. The effluent sample collected April 30, 2007 was in addition to the regularly scheduled weekly effluent sample collected May 2, 2007. Results from the April 30, 2007 effluent sample are presented in Table 4. Results from the May 2, 2007 effluent sample will be presented in the May 2007 WDR Report scheduled to be submitted to the Water Board June 15, 2007.
- The reverse osmosis concentrate was sampled monthly; the sample date was April 4, 2007. Results are presented in Table 5.
- The sludge was sampled monthly; the sample date was April 4, 2007. In accordance with WDRs, sludge is sampled each time it is transported offsite (unless sludge is transported offsite more frequently than monthly, in which case the sampling frequency is monthly). Results are presented in Table 6.
- The sludge is required to have an aquatic bioassay test quarterly; the 2<sup>nd</sup> Quarter 2007 aquatic bioassay test was performed on a sludge sample collected April 4, 2007. Results are presented in Table 6.

Table 7 identifies the laboratory that performed each analysis and lists the following required information:

- Sample location
- Sample identification number
- Sampler name

- Sample date
- Sample time
- Laboratory performing analysis
- Analysis method
- Analysis date
- Laboratory technician

In addition to the WDR required parameters, three samples were analyzed for total organic carbon (TOC) to evaluate the overall water chemistry of the IM No. 3 facility. The additional analyses were conducted on influent samples collected April 4, 12, and 18, 2007 from the specified influent WDR sampling location. The additional analyses for TOC were completed for treatment process evaluation. The TOC results remain comparable to baseline conditions and are included in the laboratory reports provided in Appendix A of this report.

## 7.0 Conclusions

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There were no exceedances of effluent limitations during the reporting period.

In addition, no incidents of non-compliance were identified during the reporting period, and no events that caused an immediate or potential threat to human health or the environment, or new releases of hazardous waste or hazardous waste constituents, or new solid waste management units were identified during the reporting period.

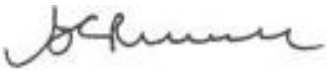
## 8.0 Certification

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PG&E submitted a signature delegation letter to the Water Board on August 12, 2005. The letter delegated PG&E signature authority to Mr. Curt Russell and Ms. Yvonne Meeks for correspondence regarding Board Order R7-2004-0103. Order R7-2006-0600 is the successor to Order R7-2004-0103; an additional signature authority delegation is not required, as confirmed in an email from Jose Cortez dated October 12, 2006.

Certification Statement:

I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Signature:  \_\_\_\_\_

Name: \_\_\_\_\_ Curt Russell \_\_\_\_\_

Company: \_\_\_\_\_ Pacific Gas and Electric Company \_\_\_\_\_

Title: \_\_\_\_\_ Topock Onsite Project Manager \_\_\_\_\_

Date: \_\_\_\_\_ May 15, 2007 \_\_\_\_\_

## Tables

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**TABLE 1**  
 Sampling Station Descriptions  
*April 2007 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System*

<b>Sample Station</b>	<b>Sample ID<sup>a</sup></b>	<b>Location</b>
Sampling Station A: Groundwater Treatment System Influent	SC-100B-WDR-###	Sample collected from tap on pipe into T-100 (see Figure TP-RP-10-10-04).
Sampling Station B: Groundwater Treatment System Effluent	SC-700B-WDR-###	Sample collected from tap on pipe downstream from T-700 (see Figure TP-RP-10-10-04).
Sampling Station D: Groundwater Treatment System Reverse Osmosis Concentrate	SC-701-WDR-###	Sample collected from tap on pipe into T-701 (see Figure TP-RP-10-10-08).
Sampling Station E: Groundwater Treatment System Sludge	SC-SLUDGE-WDR-###	Sample collected from sludge accumulated in the phase separator used this quarter (see Figure TP-RP-10-10-06).

**Note:**

### = Sequential sample identification number at each sample station.

<sup>a</sup> The sample event number is included at the end of the sample ID (e.g., SC-100B-WDR-015).

TABLE 2  
Flow Monitoring Results  
*April 2007 Monitoring Report for Interim Measure No. 3 Groundwater Treatment System*

Parameter	System Influent <sup>a,b</sup> (gpm)	System Effluent <sup>b,c</sup> (gpm)	Reverse Osmosis Concentrate <sup>b</sup> (gpm)
April 2007 Average Monthly Flowrate	104.0	96.5	8.5

**Notes:**

gpm: gallons per minute.

<sup>a</sup> Extraction wells TW-3D and PE-1 were operated during April 2007.

<sup>b</sup> The difference between influent flow rate and the sum of the effluent and reverse osmosis concentrate flow rates during April 2007 was less than one percent, which is within the range of acceptable accuracy considering the margin of error for onsite instrumentation, the water contained within the sludge, purge water treated at the IM-3 facility in addition to the extraction wells, and differences in the inventory of water in the treatment system between the beginning and end of the reporting period.

<sup>c</sup> Effluent was discharged into injection wells IW-02 and IW-03 during April 2007.



TABLE 3  
Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)  
Influent Monitoring Results <sup>a</sup>  
April 2007 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Monthly																						
<div><div></div><div>Analytes</div><div>Units <sup>b</sup></div><div>MDL</div></div>	<div><div></div><div>Date</div></div>	TDS	Turbidity	Specific Conductance	pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc
		mg/L	NTU	µmhos/cm	pHunits	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L
		64	0.016	0.7	0.057	0.75	1.8	1.8	0.1	0.28	0.25	0.87	0.000087	0.36	0.018	0.25	0.2	0.2	1.5	0.017	0.001	0.77	0.99	2.0
SC-100B-WDR-093	4/4/2007	5310	ND	8540	7.37	1250	1630	ND	ND	ND	ND	ND	1.24	ND	2.77	ND	ND	24.3	ND	3.18	0.0151	622	ND	330
RL		250	0.1	2.0	2.0	52	20	50	0.5	3.0	5.0	300	0.2	10	0.2	2.0	500	5.0	20	0.2	0.005	25	300	20

NOTES:  
(---) = not required by the WDR Monitoring and Reporting Program  
µg/L = micrograms per liter  
mg/L = milligrams per liter  
NTU = nephelometric turbidity units  
µmhos/cm = micromhos per centimeter  
ND = parameter not detected at the listed reporting limit  
J = concentration or reporting limits estimated by laboratory or validation  
MDL = method detection limit  
RL = project reporting limit

<sup>a</sup> Sampling Location for all Influent Samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04)  
<sup>b</sup> Units reported in this table are those units required in the WDRs

TABLE 4  
Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)  
Effluent Monitoring Results<sup>a</sup>  
April 2007 Monthly Report for Interim Measures No.3 Groundwater Treatment System

WDRs Effluent Limits <sup>b</sup>	Ave. Monthly	NA	NA	NA	6.5-8.4	25	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	Max Daily	NA	NA	NA	6.5-8.4	50	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Required Sampling Frequency		Weekly <sup>e</sup>						Monthly																	
<div><div></div><div>Analytes Units <sup>c</sup></div><div>MDL<sup>d</sup></div></div>	Date	TDS	Turbidity	Specific Conductance	pH	Chromium	Hexavalent Chromium	Aluminium	Ammonia (as N)	Antimony	Arsenic	Barium	Boron	Copper	Fluoride	Lead	Manganese	Molybdenum	Nickel	Nitrate (as N)	Nitrite (as N)	Sulfate	Iron	Zinc	
		mg/L	NTU	µmhos/cm	pHunits	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	
		36	0.016	0.7	0.057	0.31	0.088	1.8	0.1	0.28	0.25	0.87	0.000087	0.36	0.018	0.25	0.2	0.2	1.5	0.017	0.001	0.77	0.99	2.0	
Sample ID	Date																								
SC-700B-WDR-093	4/4/2007	3940	ND	6440	8.05	ND	ND	ND	ND	ND	ND	ND	1.24	ND	2.03	ND	ND	18.5	ND	2.52	0.0066	221	ND	ND	
	RL	140	0.1	2.0	2.0	1.0	1.0	50	0.5	3.0	5.0	300	0.2	10	0.2	2.0	500	5.0	20	0.2	0.005	25	300	20	
SC-700B-WDR-094	4/12/2007	3790	ND	6400	8.07 J	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	RL	140	0.1	2.0	2.0	1.0	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SC-700B-WDR-095	4/18/2007	3810	ND	6350	7.83 J	ND	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	RL	140	0.1	2.0	2.0	1.0	0.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SC-700B-WDR-096	4/30/2007	4030	ND	6740	8.06 J	2.10	ND	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
	RL	140	0.1	2.0	2.0	1.0	1.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	

NOTES:  
(---) = not required by the WDR Monitoring and Reporting Program  
NA = not applicable  
µg/L = micrograms per liter  
mg/L = milligrams per liter  
NTU = nephelometric turbidity units  
µmhos/cm = micromhos per centimeter  
ND = parameter not detected at the listed reporting limit  
J = concentration or reporting limits estimated by laboratory or validation  
RL = project reporting limit  
MDL = method detection limit.

<sup>a</sup> Sampling location for all Effluent Samples is tap on pipe downstream from tank T-700 to injection well IW-2 (see attached P&ID TP-PR-10-10-04)  
<sup>b</sup> In addition to the listed effluent limits, the WDRs state that the effluent shall not contain heavy metals, chemicals, pesticides or other constituents in concentrations toxic to human health  
<sup>c</sup> Units reported in this table are those units required in the WDRs  
<sup>d</sup> MDL listed is the target MDL by analysis method; however, the MDL may change for each sample analysis due to the dilution required by the matrix to meet the method QC requirements. The target MDL for each method/analyte combination is calculated annually.  
<sup>e</sup> The system was shutdown Sunday April 22 and was restarted Saturday April 28 for scheduled maintenance. There was no effluent discharge during this time; therefore no effluent sample was collected and analyzed during this week.

TABLE 5  
Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)  
Reverse Osmosis Concentrate Results <sup>a</sup>  
April 2007 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Monthly																						
<div>Sample ID</div>	<div>Date</div>	<div>Analytes Units <sup>b</sup> MDL</div>	TDS	Specific Conductance	pH	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			mg/L	µmhos/cm	pHunits	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
			320	0.7	0.057	0.00031	0.000088	0.0014	0.0012	0.00087	0.00074	0.0012	0.00075	0.0018	0.036	0.0012	0.00098	0.000049	0.0015	0.00067	0.003	0.00098	0.00089	0.002
SC-701-WDR-093	4/4/2007		23800	31300	7.87	ND	ND	ND	ND	ND	ND	ND	ND	ND	11.0	ND	0.104	ND	ND	0.0216	0.0199	ND	ND	ND
RL			1250	2.00	2.00	0.001	0.001	0.0052	0.0052	0.30	0.0052	0.0052	0.0052	0.01	0.40	0.0052	0.0052	0.0002	0.02	0.0052	0.0052	0.0052	0.0052	0.02

NOTES:

(---) = not required by the WDR Monitoring and Reporting Program  
µg/L = micrograms per liter  
mg/L = milligrams per liter  
µmhos/cm = micromhos per centimeter  
ND = parameter not detected at the listed reporting limit  
J = concentration or reporting limits estimated by laboratory or validation  
MDL = method detection limit  
RL = project reporting limit

<sup>a</sup> Sampling Location for all Reverse Osmosis Samples is tap on pipe T-701 (see attached P&ID TP-PR-10-10-08)  
<sup>b</sup> Units reported in this table are those units required in the WDRs

TABLE 6  
Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)  
Sludge Monitoring Results<sup>a</sup>  
April 2007 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Required Sampling Frequency		Monthly <sup>c</sup>																			Quarterly <sup>d</sup>		
<div><div></div><div></div><div></div></div>	Analytes	Chromium	Hexavalent Chromium	Antimony	Arsenic	Barium	Beryllium	Cadmium	Cobalt	Copper	Fluoride	Lead	Molybdenum	Mercury	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Bioassay % Survival	Bioassay % Survival	Bioassay % Survival
	Units <sup>b</sup>	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	at 750 mg/L <sup>e</sup>	at 500 mg/L <sup>e</sup>	at 250 mg/L <sup>e</sup>
	MDL	2.7	1.4	8.2	5.5	1.4	0.82	1.1	2.7	5.5	0.36	3.4	4.1	0.055	4.1	6.9	1.4	6.9	2.7	14	100	100	100
Sample ID	Date																						
SC-Sludge-WDR-093 RL	4/4/2007	16000	110	ND	20.0	82.0	ND	ND	ND	ND	28.7	ND	ND	0.90	ND	10.0	ND	ND	95.0	31.0	100	100	100
		14	5.5	82	14	27	6.9	6.9	69	34	4.0	6.9	55	0.27	55	6.9	14	14	69	27	100	100	100

NOTES:

(---) = not required by the WDR Monitoring and Reporting Program

ND = parameter not detected at the listed reporting limit

J = concentration or reporting limits estimated by laboratory or validation

mg/kg = milligrams per kilogram

mg/L = milligrams per liter

MDL = method detection limit

RL = project reporting limit

<sup>a</sup> Sampling Location for all Sludge Samples is the Sludge Collection Bin (see attached P&ID TP-PR-10-10-06)

<sup>b</sup> Units reported in this table are those units required in the WDR

<sup>c</sup> Sludge shall be tested for the listed constituents each time sludge is transported offsite, unless transport is more frequent than monthly, in which case the sampling frequency shall be monthly

<sup>d</sup> Sludge shall have an aquatic bioassay test performed each time sludge is transported offsite, unless transport is more frequent than quaterly, in which case the sampling frequency shall be quarterly.

<sup>e</sup> Concentration of sludge per 1 liter of water.

TABLE 7

Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)

Monitoring Information

April 2007 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-100B	SC-100B-WDR-093	Joe Aide	4/4/2007	12:30:00 PM	TLI	EPA 120.1	SC	4/5/2007	Tina Acquiat
					TLI	EPA 150.1	PH	4/5/2007	Tina Acquiat
					TLI	EPA 160.1	TDS	4/6/2007	Tina Acquiat
					TLI	EPA 180.1	TRB	4/5/2007	Gautam Savani
					TLI	EPA 200.7	ZN	4/6/2007	Laureen Tan
					TLI	EPA 200.7	B	4/12/2007	Laureen Tan
					TLI	EPA 200.7	BA	4/6/2007	Laureen Tan
					TLI	EPA 200.7	CR	4/6/2007	Laureen Tan
					TLI	EPA 200.7	FE	4/6/2007	Laureen Tan
					TLI	EPA 200.7	NI	4/6/2007	Laureen Tan
					TLI	EPA 200.8	SB	4/9/2007	Mark Kotani
					TLI	EPA 200.8	AS	4/9/2007	Mark Kotani
					TLI	EPA 200.8	CU	4/9/2007	Mark Kotani
					TLI	EPA 200.8	MN	4/9/2007	Mark Kotani
					TLI	EPA 200.8	MO	4/9/2007	Mark Kotani
					TLI	EPA 200.8	PB	4/9/2007	Mark Kotani
					TLI	EPA 200.8	AL	4/11/2007	Mark Kotani
					TLI	EPA 218.6	CR6	4/4/2007	Jean-Paul Gleeson
					TLI	EPA 300.0	FL	4/6/2007	Giawad Ghenniwa
					TLI	EPA 300.0	SO4	4/6/2007	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	4/5/2007	Giawad Ghenniwa
SC-700B	SC-700B-WDR-093	Joe Aide	4/4/2007	12:30:00 PM	TLI	EPA 350.2	NH3N	4/6/2007	Iordan Stavrev
					TLI	EPA 354.1	NO2N	4/5/2007	Tina Acquiat
					TLI	EPA 120.1	SC	4/5/2007	Tina Acquiat
					TLI	EPA 150.1	PH	4/5/2007	Tina Acquiat
					TLI	EPA 160.1	TDS	4/6/2007	Tina Acquiat
					TLI	EPA 180.1	TRB	4/5/2007	Gautam Savani
					TLI	EPA 200.7	CR	4/9/2007	Laureen Tan
					TLI	EPA 200.7	ZN	4/6/2007	Laureen Tan
					TLI	EPA 200.7	B	4/12/2007	Laureen Tan
					TLI	EPA 200.7	FE	4/6/2007	Laureen Tan
					TLI	EPA 200.7	BA	4/6/2007	Laureen Tan
					TLI	EPA 200.7	NI	4/6/2007	Laureen Tan
					TLI	EPA 200.8	AL	4/11/2007	Mark Kotani
					TLI	EPA 200.8	SB	4/9/2007	Mark Kotani
					TLI	EPA 200.8	MO	4/9/2007	Mark Kotani
					TLI	EPA 200.8	MN	4/9/2007	Mark Kotani

TABLE 7

Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)

Monitoring Information

April 2007 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-700B	SC-700B-WDR-093	Joe Aide	4/4/2007	12:30:00 PM	TLI	EPA 200.8	CU	4/9/2007	Mark Kotani
					TLI	EPA 200.8	AS	4/9/2007	Mark Kotani
					TLI	EPA 200.8	PB	4/9/2007	Mark Kotani
					TLI	EPA 218.6	CR6	4/5/2007	Jean-Paul Gleeson
					TLI	EPA 300.0	SO4	4/6/2007	Giawad Ghenniwa
					TLI	EPA 300.0	NO3N	4/5/2007	Giawad Ghenniwa
					TLI	EPA 300.0	FL	4/6/2007	Giawad Ghenniwa
					TLI	EPA 350.2	NH3N	4/6/2007	Iordan Stavrev
					TLI	EPA 354.1	NO2N	4/5/2007	Tina Acquiat
SC-700B	SC-700B-WDR-094	Erik Johannsen	4/12/2007	1:00:00 PM	TLI	EPA 120.1	SC	4/13/2007	Tina Acquiat
					TLI	EPA 180.1	TRB	4/12/2007	Gautam Savani
					TLI	EPA 200.8	CR	4/26/2007	Michel Mendoza
					TLI	EPA 218.6	CR6	4/12/2007	Jean-Paul Gleeson
					TLI	SM2540C	TDS	4/17/2007	Tina Acquiat
					TLI	SM4500-HB	PH	4/13/2007	Tina Acquiat
SC-700B	SC-700B-WDR-095	David Chaney	4/18/2007	12:25:00 PM	TLI	EPA 120.1	SC	4/19/2007	Tina Acquiat
					TLI	EPA 180.1	TRB	4/19/2007	Gautam Savani
					TLI	EPA 200.8	CR	4/26/2007	Michel Mendoza
					TLI	EPA 218.6	CR6	4/19/2007	Jean-Paul Gleeson
					TLI	SM2540C	TDS	4/19/2007	Tina Acquiat
					TLI	SM4500-HB	PH	4/19/2007	Tina Acquiat
SC-700B	SC-700B-WDR-096	Erik Johannsen	4/30/2007	1:00:00 PM	TLI	EPA 120.1	SC	5/2/2007	Tina Acquiat
					TLI	EPA 180.1	TRB	5/1/2007	Gautam Savani
					TLI	EPA 200.8	CR	5/2/2007	Michel Mendoza
					TLI	EPA 218.6	CR6	5/1/2007	Jean-Paul Gleeson
					TLI	SM2540C	TDS	5/2/2007	Tina Acquiat
					TLI	SM4500-HB	PH	5/1/2007	Tina Acquiat
SC-701	SC-701-WDR-093	Joe Aide	4/4/2007	12:20:00 PM	TLI	EPA 120.1	SC	4/5/2007	Tina Acquiat
					TLI	EPA 150.1	PH	4/5/2007	Tina Acquiat
					TLI	EPA 160.1	TDS	4/6/2007	Tina Acquiat
					TLI	EPA 200.7	ZN	4/6/2007	Laureen Tan
					TLI	EPA 200.7	CR	4/9/2007	Laureen Tan
					TLI	EPA 200.7	NI	4/6/2007	Laureen Tan
					TLI	EPA 200.7	BA	4/6/2007	Laureen Tan
					TLI	EPA 200.8	TL	4/9/2007	Mark Kotani
					TLI	EPA 200.8	AG	4/9/2007	Mark Kotani

TABLE 7

Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)

Monitoring Information

April 2007 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-701	SC-701-WDR-093	Joe Aide	4/4/2007	12:20:00 PM	TLI	EPA 200.8	V	4/9/2007	Mark Kotani
					TLI	EPA 200.8	SE	4/9/2007	Mark Kotani
					TLI	EPA 200.8	SB	4/9/2007	Mark Kotani
					TLI	EPA 200.8	PB	4/9/2007	Mark Kotani
					TLI	EPA 200.8	BE	4/9/2007	Mark Kotani
					TLI	EPA 200.8	CU	4/9/2007	Mark Kotani
					TLI	EPA 200.8	CO	4/9/2007	Mark Kotani
					TLI	EPA 200.8	AS	4/9/2007	Mark Kotani
					TLI	EPA 200.8	CD	4/9/2007	Mark Kotani
					TLI	EPA 200.8	MO	4/9/2007	Mark Kotani
					TLI	EPA 218.6	CR6	4/5/2007	Jean-Paul Gleeson
					TLI	EPA 245.1	HG	4/12/2007	Michel Mendoza
					TLI	EPA 300.0	FL	4/6/2007	Giawad Ghenniwa
SC-Sludge	SC-Sludge-WDR-093	Joe Aide	4/4/2007	12:15:00 PM	STL	EPA 160.3	MOIST	4/7/2007	Janice Salenga
					TLI	EPA 300.0	FL	4/6/2007	Giawad Ghenniwa
					STL	EPA 6010B	PB	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	AG	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	ZN	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	V	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	TL	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	SE	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	SB	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	NI	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	MO	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	CU	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	CR	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	CO	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	CD	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	BE	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	AS	4/19/2007	Josephine Asuncion
					STL	EPA 6010B	BA	4/19/2007	Josephine Asuncion
					STL	EPA 7471A	HG	4/19/2007	Hao Ton
					STL	SW 7199	CR6	4/6/2007	Yuriy Zakhrafov

TABLE 7

Board Order No. R7-2006-0060 Waste Discharge Requirements (WDRs)

Monitoring Information

April 2007 Monthly Report for Interim Measures No.3 Groundwater Treatment System

Location	Sample ID	Sampler Name	Sample Date	Sample Time	Lab	Analysis Method	Parameter	Analysis Date	Lab Technician
SC-Sludge	SC-Sludge-WDR-093	Joe Aide	04/04/2007	12:15:00 PM	MBC	96-Hour Acute Aquatic Toxicity Screening Test	BIO	4/20//2007 - 04/24/2007	Chris Lim, Sarah Winterrowd

**NOTES:**

SC-700B = Sampling location for all Effluent Samples is tap on pipe downstream from tank T-700 to injection well IW-2 (see attached P&ID TP-PR-10-10-04)

SC-100B = Sampling Location for all Influent Samples is tap on pipe from extraction wells into tank T-100 (see attached P&ID TP-PR-10-10-04)

SC-701 = Sampling Location for all Reverse Osmosis Samples is tap on pipe T-701 (see attached P&ID TP-PR-10-10-08)

Prior to April 11, 2007 the analytical methods listed in the 40 CFR Part 136 for pH and TDS were E150.1 and E160.1, respectively. Per EPA and Department of Health Services guidelines, the analytical methods listed in the current 40 CFR Part 136 have changed to SM4500-H B and SM2540C as shown on the table.

TLI = Truesdail Laboratories, Inc.

STL = Severn Trent Laboratories, Inc.

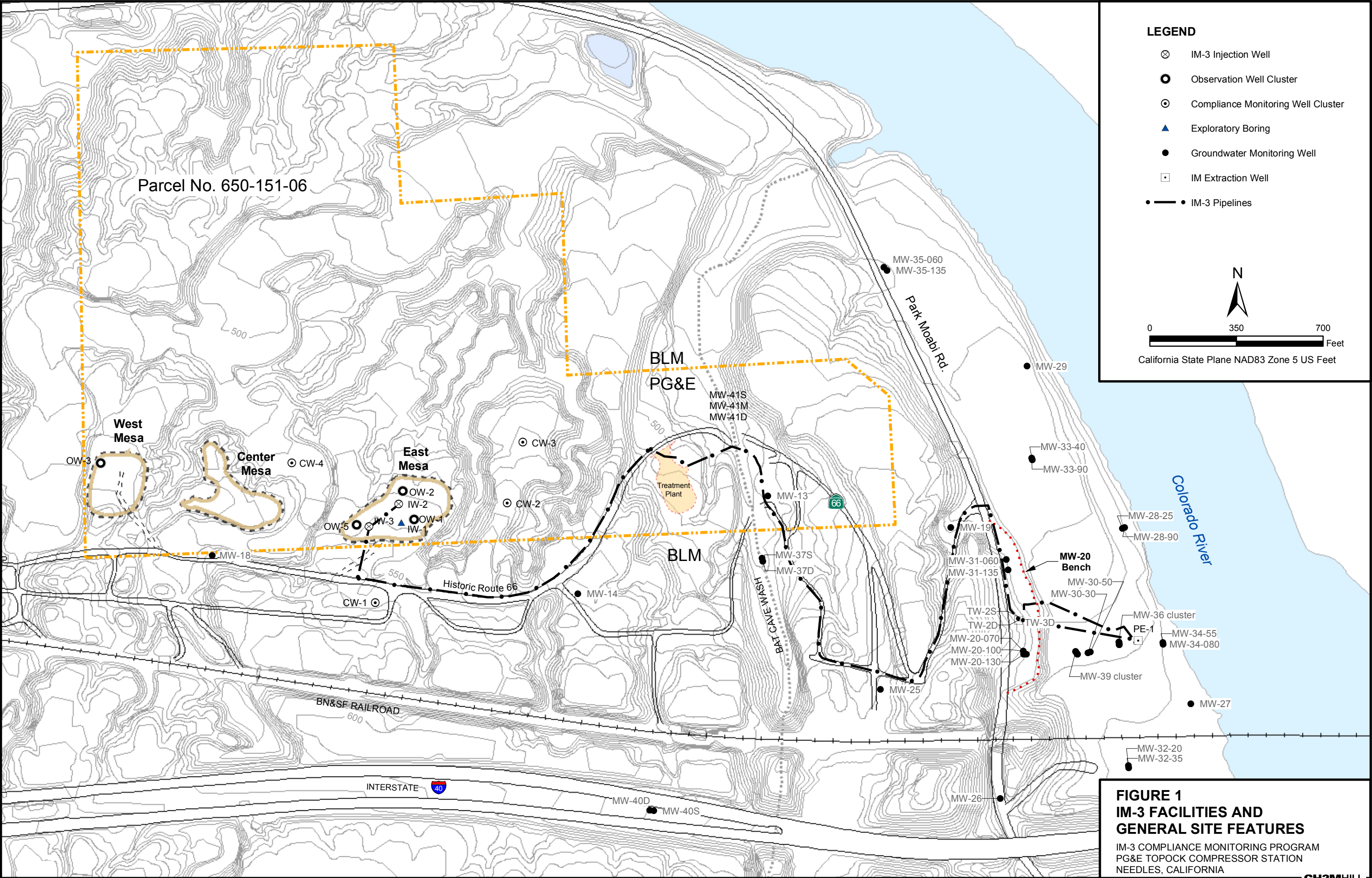
MBC = MBC Applied Environmental Sciences

SC = specific conductance	MO = molybdenum
PH = pH	NI = nickel
TDS = total dissolved solids	PB = lead
TRB = turbidity	HG = mercury
CR = chromium	SE = selenium
CR6 = hexavalent chromium	TL = thallium
FL = fluoride	CO = cobalt
AL = aluminum	CD = cadmium
B = boron	BE = beryllium
FE = iron	AG = silver
MN = manganese	V = vanadium
ZN = zinc	NO3N = nitrate (as N)
SB = antimony	NH3N = ammonia (as N)
AS = arsenic	NO2N = nitrite (as N)
BA = barium	SO4 = sulfate
CU = copper	



## Figures

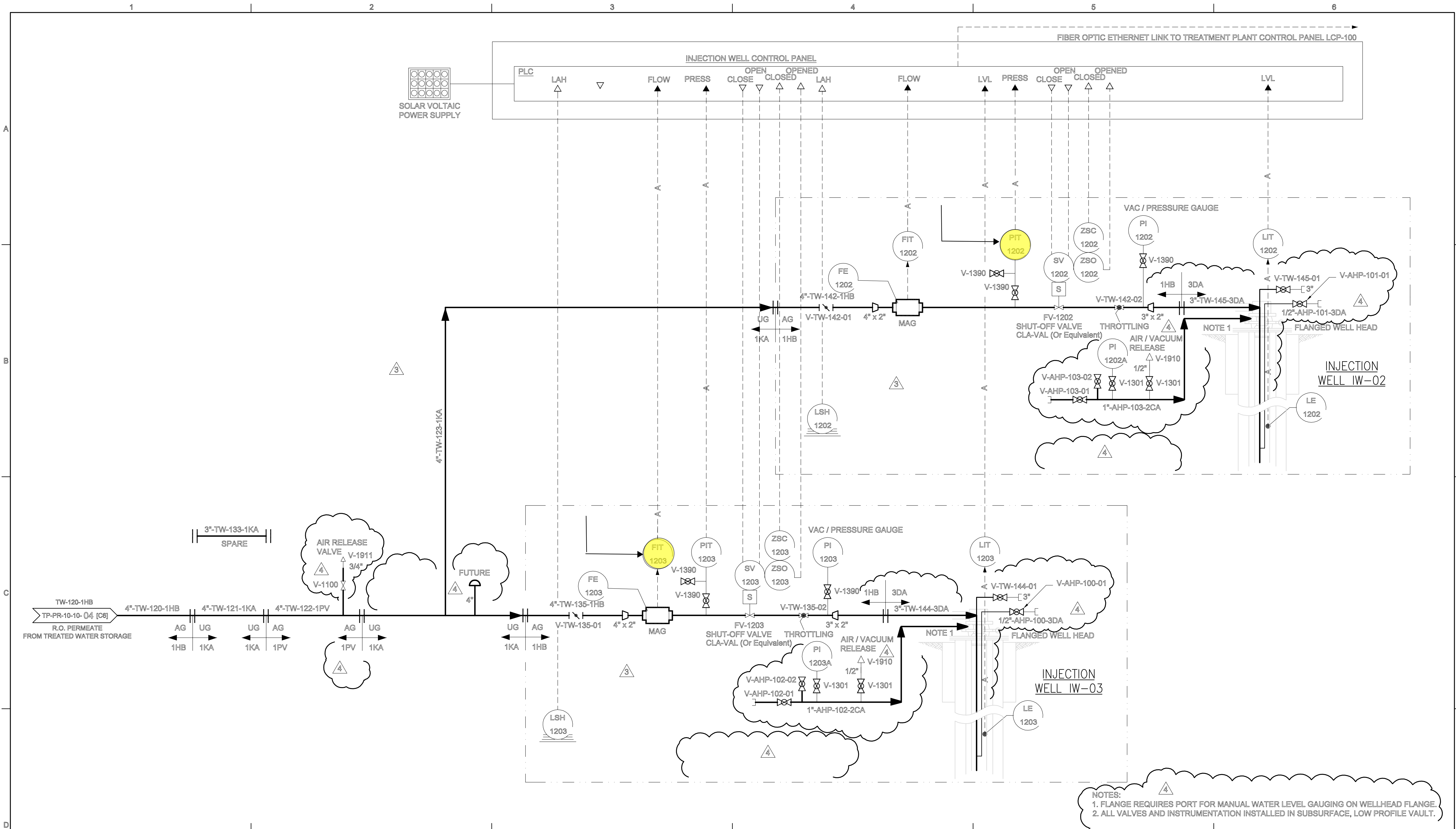
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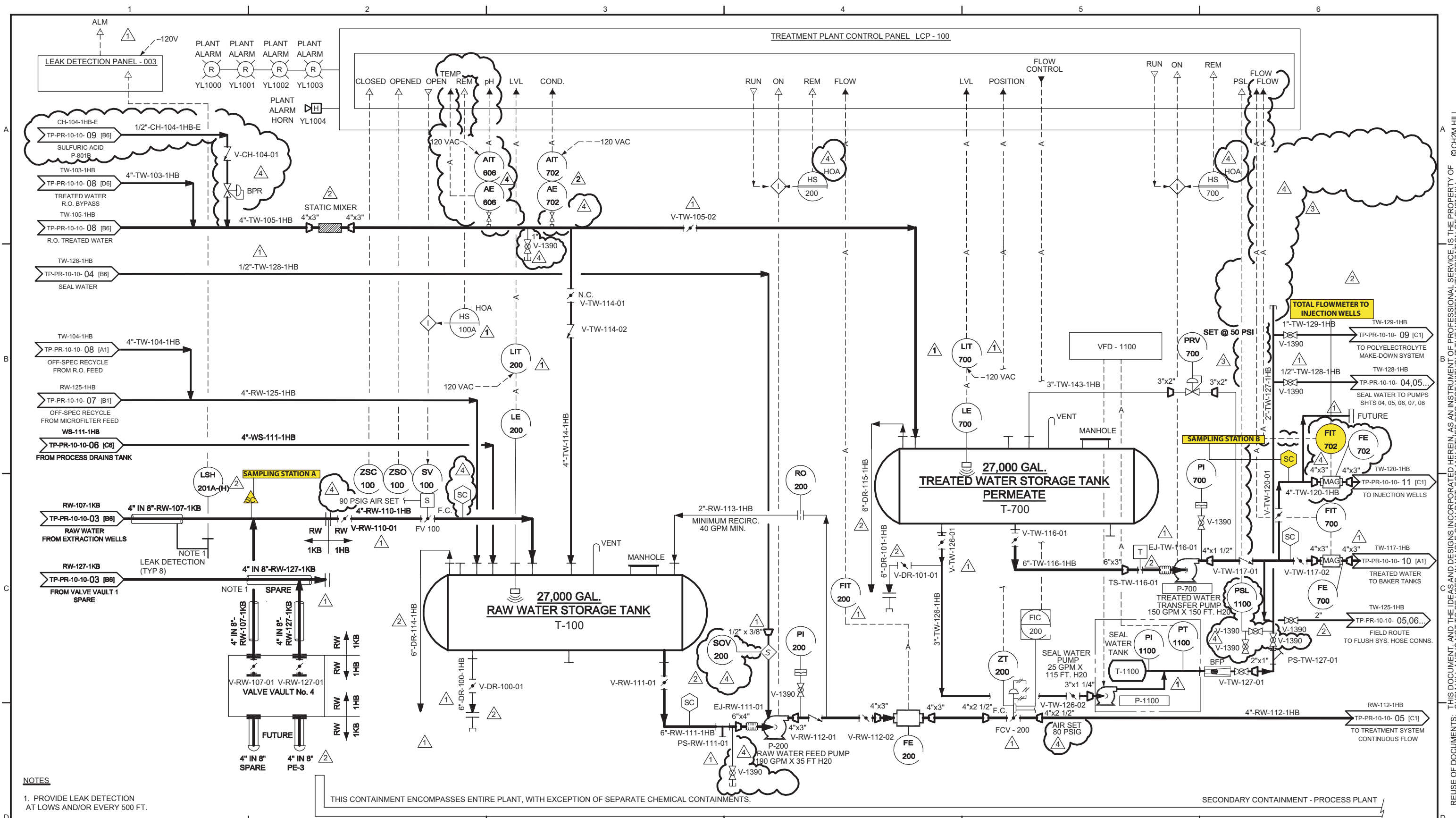








RESPONSIBLE ENGINEER: Kenneth L. Martins PE # CH4876 Exp. 5-30-05	NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 4	DATE 03/10/05	PRINT DISTRIBUTION	STATUS					PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 EXPANDED GROUNDWATER EXTRACTION AND TREATMENT SYSTEM PROJ NO. 315994	PROCESS AND INSTRUMENTATION DIAGRAM SHEET 11 INJECTION WELLS	
	A	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE	ISSUED	REV	DATE	SDE	PEM		
	0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL		ELECTRICAL		STATUS	PRELIMINARY						
	1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL		INST & CONTROL		REV.	FOR REVIEW AND APPROVAL	A	07/28/04				
	2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL		ARCHITECTURAL		CLIENT	APPROVED FOR CONSTRUCTION	0	09/03/04	KLM	TP		
	3	02/14/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD	REVISED & APPROVED FOR CONSTRUCTION	4	/ /				
	4	03/10/05	REMOVED HOLD AND APPROVED FOR CONSTRUCTION	EFC	AJ	PIPING		GEN. ARRANG.		INTRA CO.						DWG. NO. TP-PR-10-10-11	REV. 4
											SCALE	NONE			CH2MHILL		



NOTES

1. PROVIDE LEAK DETECTION AT LOWS AND/OR EVERY 500 FT.

THIS CONTAINMENT ENCOMPASSES ENTIRE PLANT, WITH EXCEPTION OF SEPARATE CHEMICAL CONTAINMENTS.

SECONDARY CONTAINMENT - PROCESS PLANT

RESPONSIBLE ENGINEER: Kenneth L. Martins CH4876 PE #	NO.	DATE	REVISION	BY	CHK	REVISION APPROVAL	REV 4	DATE 09/21/05	PRINT DISTRIBUTION	STATUS					PACIFIC GAS & ELECTRIC CO. TOPOCK COMPRESSOR STATION INTERIM MEASURE 3 EXPANDED GROUNDWATER EXTRACTION AND TREATMENT SYSTEM PROJ NO. 315994	PROCESS AND INSTRUMENTATION DIAGRAM  SHEET 04 STORAGE AREA			
	0	07/28/04	FOR INTERNAL REVIEW	EFC	AJ	DISCIPLINE	REVIEWED	DISCIPLINE	REVIEWED	DATE		ISSUED	REV	DATE				SDE	PEM
	0	09/03/04	APPROVED FOR CONSTRUCTION	EFC	AJ	CIVIL		ELECTRICAL		STATUS		PRELIMINARY							
	1	10/13/04	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	STRUCTURAL		INST & CONTROL		REV.		FOR REVIEW AND APPROVAL	D	07/28/04					
	2	01/23/05	REVISED AND APPROVED FOR CONSTRUCTION	EFC	AJ	MECHANICAL		ARCHITECTURAL		CLIENT		APPROVED FOR CONSTRUCTION	0	09/03/04				KLM	TP
	3	02/14/05	ADDED RECIRC. LINE AND PRV VALVE TO T-700 - APPROVED FOR CONSTRUCTION	EFC	AJ	PROCESS		ENVIRONMENTAL		FIELD		REVISED & APPROVED FOR CONSTRUCTION	4	/ /					
	4	09/21/05	REVISED PER AS-BUILT CONDITIONS	EFC	AJ	PIPING		GEN. ARRANG.		INTRA CO.									
										SCALE NONE					CH2MHILL		DWG. NO. TP-PR-10-10-04		REV. 4









**Appendix A**  
**April 2007 Laboratory Analytical Reports**

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# TRUESDAIL LABORATORIES, Inc.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

April 20, 2007

14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
www.truesdail.com

E2 Consulting Engineers, Inc.  
Mr. Shawn Duffy  
155 Grand Ave., Suite 1000  
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-093 PROJECT, GROUNDWATER AND  
SOIL MONITORING,

TLI No.: 964807

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-093 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, Anions, Ammonia, Total Dissolved Solids, Total Organic Carbon, and Title 22 Metals and soil monitoring for Fluoride. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on April 4, 2007, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Due to the U.S. EPA Methods Update Rule (MUR), some of the approved methods have changed. Therefore, the reported methods have been updated to reflect these changes and may not match the methods listed on the chain of custody. Mr. Shawn Duffy was notified and approved these changes.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

Mona Nassimi  
Manager, Analytical Services

K.R.P. Iyer  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Three (3) Groundwaters + One (1) Soil Sample

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
www.truesdail.com

**Laboratory No.:** 964807

**Date:** April 20, 2007

**Collected:** April 4, 2007

**Received:** April 4, 2007

## ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Tina Acquiat
EPA 150.1	pH	Tina Acquiat
EPA 160.1	Total Dissolved Solids	Tina Acquiat
EPA 180.1	Turbidity	Gautam Savani
EPA 300.0	Anions	Giawad Ghenniwa
EPA 350.2	Ammonia	Iordan Stavrev
EPA 354.1	Nitrite as N	Tina Acquiat
SM 5310C	Total Organic Carbon	Hope Trinidad
EPA 200.7	Metals by ICP	Laureen Tan
EPA 200.8	Metals by ICP/MS	Mark Kotani
EPA 245.1	Mercury	Michel Mendoza
EPA 218.6	Hexavalent Chromium	Jean Paul Gleeson

# TRUESDAIL LABORATORIES, Inc.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

## REPORT

14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
www.truesdail.com

**Laboratory No.:** 964807

**Date:** April 20, 2007

**Collected:** April 4, 2007

**Received:** April 4, 2007

**Prep/ Analyzed:** April 5, 2007

**Analytical Batch:** 04PH07D

**Sample:** Three (3) Groundwaters + One (1) Soil Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 346129.IM.02.E2  
**P.O. No.:** 346129.IM.02.E2

**Investigation:**

pH by EPA 150.1

## Analytical Results pH

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Run Time</u>	<u>Units</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
964807-1	SC-100B-WDR-093	09:40	pH Units	0.0570	2.00	7.37
964807-2	SC-700B-WDR-093	09:42	pH Units	0.0570	2.00	8.05
964807-3	SC-701-WDR-093	09:44	pH Units	0.0570	2.00	7.87

## QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	964807-3	7.87	7.87	0.00	+ 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.02	7.00	0.02	+ 0.100 Units	Yes
LCS #1	7.02	7.00	0.02	+ 0.100 Units	Yes
LCS #2	7.02	7.00	0.02	+ 0.100 Units	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

008

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# TRUESDAIL LABORATORIES, Inc.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

## REPORT

14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
www.truesdail.com

**Attention:** Shawn Duffy

**Laboratory No.:** 964807

**Sample:** Three (3) Groundwaters + One (1) Soil Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 346129.IM.02.E2  
**P.O. No.:** 346129.IM.02.E2

**Date:** April 20, 2007  
**Collected:** April 4, 2007  
**Received:** April 4, 2007  
**Prep/ Analyzed:** April 5, 2007  
**Analytical Batch:** 04EC07C

### Investigation:

Specific Conductivity by EPA 120.1

## Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
964807-1	SC-100B-WDR-093	µmhos/cm	EPA 120.1	1.00	2.00	8540
964807-2	SC-700B-WDR-093	µmhos/cm	EPA 120.1	1.00	2.00	6440
964807-3	SC-701-WDR-093	µmhos/cm	EPA 120.1	1.00	2.00	31300

## QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	964807-3	31300	31400	0.32%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	684	706	96.9%	90% - 110%	Yes
CVS#1	946	1000	94.6%	90% - 110%	Yes
LCS	684	706	96.9%	90% - 110%	Yes

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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**Date:** April 20, 2007

**Project Name:** PG&E Topock Project

**Collected:** April 4, 2007

**Project No.:** 346129.IM.02.E2

**Received:** April 4, 2007

**P.O. No.:** 346129.IM.02.E2

**Prep/ Analyzed:** April 6, 2007

**Analytical Batch:** 04TDS07C

**Investigation:**

**Total Dissolved Solids by EPA 160.1**

### Analytical Results Total Dissolved Solids

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>RL</u>	<u>Results</u>
964807-1	SC-100B-WDR-093	mg/L	EPA 160.1	250	5310
964807-2	SC-700B-WDR-093	mg/L	EPA 160.1	139	3940
964807-3	SC-701-WDR-093	mg/L	EPA 160.1	1250	23800

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	964799-2	712	717	0.35%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	500	500	100%	90% - 110%	Yes
LCS 2	499	500	99.8%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

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**Attention:** Shawn Duffy

**Laboratory No.:** 964807

**Sample:** Three (3) Groundwaters + One (1) Soil Sample

**Date:** April 20, 2007

**Project Name:** PG&E Topock Project

**Collected:** April 4, 2007

**Project No.:** 346129.IM.02.E2

**Received:** April 4, 2007

**P.O. No.:** 346129.IM.02.E2

**Prep/ Analyzed:** April 5, 2007

**Analytical Batch:** 04TUC07F

**Investigation:**

**Turbidity by Method EPA 180.1**

### Analytical Results Turbidity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
964807-1	SC-100B-WDR-093	12:30	NTU	1.00	0.100	ND
964807-2	SC-700B-WDR-093	12:30	NTU	1.00	0.100	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	964805-17	ND	ND	0.00%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.44	8.00	93.0%	90% - 110%	Yes
LCS	7.40	8.00	92.5%	90% - 110%	Yes
LCS	7.35	8.00	91.9%	90% - 110%	Yes

**ND:** Below the reporting limit (Not Detected).

**DF:** Dilution Factor

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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**Attention:** Shawn Duffy

**Sample:** Three (3) Groundwaters + One (1) Soil Sample

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

**P.O. No.:** 346129.IM.02.E2

**Prep. Batch:** 04CrH07C

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**Prep/ Analyzed:** April 4 - 5, 2007

**Analytical Batch:** 04CrH07C

**Investigation:**

**Hexavalent Chromium by IC Using Method EPA 218.6**

### Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
964807-1	SC-100B-WDR-093	12:30	4/4/07; 23:28	mg/L	100	0.0200	1.63
964807-2	SC-700B-WDR-093	12:30	4/5/07; 00:46	mg/L	5.00	0.0010	ND
964807-3	SC-701-WDR-093	12:20	4/5/07; 01:37	mg/L	5.00	0.0010	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	964807-1	1.63	1.65	1.22%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	964807-1	1.63	100	0.0200	2.00	3.70	3.63	104%	90-110%	Yes
MS	964807-2	0.00	1.06	0.00100	0.00106	0.00119	0.00106	112%	90-110%	No
MS	964807-2	0.00	5.00	0.00100	0.00500	0.00546	0.00500	109%	90-110%	Yes
MS	964807-3	0.00	1.06	0.00100	0.00106	0.00	0.00106	0.00%	90-110%	No
MS	964807-3	0.00	5.00	0.00100	0.00500	0.00526	0.00500	105%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00513	0.00500	103%	90% - 110%	Yes
MRCVS#1	0.0103	0.0100	103%	95% - 105%	Yes
MRCVS#2	0.0103	0.0100	103%	95% - 105%	Yes
LCS	0.00513	0.00500	103%	90% - 110%	Yes
LCSD	0.00514	0.00500	103%	90% - 110%	Yes

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DF: Dilution Factor.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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**Attention:** Shawn Duffy

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**Project Name:** PG&E Topock Project

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TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
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**Laboratory No.:** 964807

**Date:** April 20, 2007

**Collected:** April 4, 2007

**Received:** April 4, 2007

**Prep/ Analyzed:** April 6, 2007

**Analytical Batch:** 04NH307B

**Investigation:**

**Ammonia as N by Method EPA 350.2**

### Analytical Results Ammonia as N

TLI I.D.	Field I.D.	Sample Time	Method	Units	DF	RL	Results
964807-1	SC-100B-WDR-093	12:30	EPA 350.2	mg/L	1.00	0.500	ND
964807-2	SC-700B-WDR-093	12:30	EPA 350.2	mg/L	1.00	0.500	ND

### QA/QC Summary

QC STD I.D.		Laboratory Number		Concentration		Duplicate Concentration		Relative Percent Difference		Acceptance limits		QC Within Control	
Duplicate		964838-1		5.84		5.84		0.00%		≤ 20%		Yes	

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	964838-1	5.84	1.00	10.0	10.0	16.0	15.8	102%	75-125%	Yes

QC Std I.D.		Measured Concentration		Theoretical Concentration		Percent Recovery		Acceptance Limits		QC Within Control	
LCS		9.80		10.0		98.0%		90% - 110%		Yes	

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Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Three (3) Groundwaters + One (1) Soil Sample

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

**P.O. No.:** 346129.IM.02.E2

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(714) 730-6239 · FAX (714) 730-6462  
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**Laboratory No.:** 964807

**Date:** April 20, 2007

**Collected:** April 4, 2007

**Received:** April 4, 2007

**Prep/ Analyzed:** April 6, 2007

**Analytical Batch:** 04AN07E

**Investigation:**

**Fluoride by Ion Chromatography using EPA 300.0**

### Analytical Results Fluoride

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
964807-1	SC-100B-WDR-093	12:30	11:06	mg/L	1.00	0.200	2.77
964807-2	SC-700B-WDR-093	12:30	11:18	mg/L	1.00	0.200	2.03
964807-3	SC-701-WDR-093	12:20	14:35	mg/L	2.00	0.400	11.0
964807-4	SC-Sludge-WDR-093	12:15	15:32	mg/kg	20.0	4.00	28.7

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	964756-4	0.198	0.206	3.96%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	964756-4	0.198	1.00	2.00	2.00	2.32	2.20	106%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.16	4.00	104%	90% - 110%	Yes
MRCVS#1	3.12	3.00	104%	90% - 110%	Yes
MRCVS#2	3.12	3.00	104%	90% - 110%	Yes
MRCVS#3	3.12	3.00	104%	90% - 110%	Yes
LCS	4.14	4.00	104%	90% - 110%	Yes
LCSD	4.16	4.00	104%	90% - 110%	Yes

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Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

014

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## REPORT

**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
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**Attention:** Shawn Duffy

**Sample:** Three (3) Groundwaters + One (1) Soil Sample

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

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**Prep/ Analyzed:** April 6, 2007

**Analytical Batch:** 04AN07E

**Investigation:**

**Sulfate by Method EPA 300.0**

## Analytical Results Sulfate

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
964807-1	SC-100B-WDR-093	12:30	13:58	mg/L	25.0	25.0	622
964807-2	SC-700B-WDR-093	12:30	14:09	mg/L	25.0	25.0	221

## QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	964756-4	61.2	60.4	1.32%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	964756-4	61.2	25.0	4.00	100	159	161	97.8%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	19.9	20.0	99.5%	90% - 110%	Yes
MRCVS#1	15.1	15.0	101%	90% - 110%	Yes
MRCVS#2	15.2	15.0	101%	90% - 110%	Yes
MRCVS#3	15.0	15.0	100%	90% - 110%	Yes
LCS	19.8	20.0	99.0%	90% - 110%	Yes
LCSD	20.0	20.0	100%	90% - 110%	Yes

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Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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Attention: Shawn Duffy

Sample: Three (3) Groundwaters + One (1) Soil Sample

Project Name: PG&E Topock Project

Project No.: 346129.IM.02.E2

P.O. No.: 346129.IM.02.E2

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Prep/ Analyzed: April 5, 2007

Analytical Batch: 04AN07D

Investigation: Nitrate as N by Ion Chromatography using EPA 300.0

### Analytical Results Nitrate as N

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
964807-1	SC-100B-WDR-093	12:30	11:28	mg/L	1.00	0.200	3.18
964807-2	SC-700B-WDR-093	12:30	11:40	mg/L	1.00	0.200	2.52

### QA/QC Summary

QC STD I.D.		Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate		964805-38	2.22	2.23	0.45%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	964805-38	2.22	1.00	4.00	4.00	6.25	6.22	101%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	4.00	4.00	100%	90% - 110%	Yes
MRCVS#1	2.97	3.00	99.0%	90% - 110%	Yes
MRCVS#2	2.97	3.00	99.0%	90% - 110%	Yes
MRCVS#3	2.98	3.00	99.3%	90% - 110%	Yes
LCS	4.00	4.00	100%	90% - 110%	Yes
LCSD	4.01	4.00	100%	90% - 110%	Yes

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Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

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**Attention:** Shawn Duffy

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**Laboratory No.:** 964807

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**Prep/ Analyzed:** April 5, 2007

**Analytical Batch:** 04NO207C

**Investigation:**

**Nitrite as N by Method EPA 354.1**

### Analytical Results for Nitrite as N

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
964807-1	SC-100B-WDR-093	12:30	13:40	mg/L	1.00	0.0050	0.0151
964807-2	SC-700B-WDR-093	12:30	13:41	mg/L	1.00	0.0050	0.0066

### QA/QC Summary

QC STD I.D.		Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate		964800-3	0.0132	0.0132	0.00%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc.of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	964800-3	0.0132	1.00	0.100	0.100	0.112	0.113	98.8%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCSS	0.0894	0.0900	99.3%	90% - 110%	Yes
MRCVS#1	0.0982	0.100	98.2%	90% - 110%	Yes
LCS	0.182	0.180	101%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

017

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

## REPORT

Client: E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

Attention: Shawn Duffy

Sample: Three (3) Groundwaters + One (1) Soil Sample

Project Name: PG&E Topock Project

Project No.: 346129.IM.02.E2

P.O. No.: 346129.IM.02.E2

Prep. Batch: 04TOC07B

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www.truesdail.com

Laboratory No.: 964807

Date: April 20, 2007

Collected: April 4, 2007

Received: April 4, 2007

Prep/ Analyzed: April 11, 2007

Analytical Batch: 04TOC07B

Investigation:

Total Organic Carbon by SM 5310C

### Analytical Results Total Organic Carbon

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
964807-1	SC-100B-WDR-093	12:30	17:34	mg/L	1.00	0.300	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Sample Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965027	4.25	4.36	2.56%	< 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	965027	4.25	1.00	10.0	10.0	14.7	14.3	105%	75-125%	Yes


  

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	9.47	10.0	94.7%	90% - 110%	Yes
MRCVS#1	10.4	10.0	104%	90% - 110%	Yes
LCS	19.1	20.0	95.5%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

018

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Established 1931

## REPORT

**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Samples:** Three (3) Groundwaters + One (1) Soil Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 346129.IM.02.E2  
**P.O. No.:** 346129.IM.02.E2

**Investigation:** Total Metal Analyses as Requested

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**Laboratory No.:** 964807

**Reported:** April 20, 2007

**Collected:** April 4, 2007

**Received:** April 4, 2007

**Analyzed:** April 6 - 12, 2007

## Analytical Results

SAMPLE ID: SC-100B-WDR-093		Time Collected: 12:30		LAB ID: 964807-1				
Parameter	Method	Reported		Units	RL	Batch	Date	Time
		Value	DF				Analyzed	Analyzed
Aluminum	EPA 200.8	ND	2.08	mg/L	0.0500	041107A	04/11/07	11:58
Antimony	EPA 200.8	ND	2.08	mg/L	0.0030	040907A	04/09/07	15:25
Arsenic	EPA 200.8	ND	2.08	mg/L	0.0050	040907A	04/09/07	15:25
Barium	EPA 200.7	ND	1.04	mg/L	0.300	040607B	04/06/07	15:14
Chromium	EPA 200.7	1.25	1.04	mg/L	0.0520	040607B	04/06/07	15:14
Copper	EPA 200.8	ND	2.08	mg/L	0.0100	040907A	04/09/07	15:25
Lead	EPA 200.8	ND	2.08	mg/L	0.0020	040907A	04/09/07	15:25
Manganese	EPA 200.8	ND	2.08	mg/L	0.500	040907A	04/09/07	15:25
Molybdenum	EPA 200.8	0.0243	2.08	mg/L	0.0050	040907A	04/09/07	15:25
Nickel	EPA 200.7	ND	1.04	mg/L	0.0200	040607B	04/06/07	15:14
Zinc	EPA 200.7	0.330	1.04	mg/L	0.0200	040607B	04/06/07	15:14
Boron	EPA 200.7	1.24	1.04	mg/L	0.200	041207A	04/12/07	11:51
Iron	EPA 200.7	ND	1.04	mg/L	0.300	040607B	04/06/07	15:14

SAMPLE ID: SC-700B-WDR-093		Time Collected: 12:30		LAB ID: 964807-2				
Parameter	Method	Reported		Units	RL	Batch	Date	Time
		Value	DF				Analyzed	Analyzed
Aluminum	EPA 200.8	ND	2.08	mg/L	0.0500	041107A	04/11/07	12:04
Antimony	EPA 200.8	ND	2.08	mg/L	0.0030	040907A	04/09/07	15:31
Arsenic	EPA 200.8	ND	2.08	mg/L	0.0050	040907A	04/09/07	15:31
Barium	EPA 200.7	ND	1.04	mg/L	0.300	040607B	04/06/07	15:18
Chromium	EPA 200.7	ND	1.04	mg/L	0.0010	040907A	04/09/07	15:19
Copper	EPA 200.8	ND	2.08	mg/L	0.0100	040907A	04/09/07	15:31
Lead	EPA 200.8	ND	2.08	mg/L	0.0020	040907A	04/09/07	15:31
Manganese	EPA 200.8	ND	2.08	mg/L	0.500	040907A	04/09/07	15:31
Molybdenum	EPA 200.8	0.0185	2.08	mg/L	0.0050	040907A	04/09/07	15:31
Nickel	EPA 200.7	ND	1.04	mg/L	0.0200	040607B	04/06/07	15:18
Zinc	EPA 200.7	ND	1.04	mg/L	0.0200	040607B	04/06/07	15:18
Boron	EPA 200.7	1.24	1.04	mg/L	0.200	041207A	04/12/07	12:03
Iron	EPA 200.7	ND	1.04	mg/L	0.300	040607B	04/06/07	15:18

019

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# TRUESDAIL LABORATORIES, INC.

Report Continued

SAMPLE ID: SC-701-WDR-093		Time Collected: 12:20		LAB ID: 964807-3				
Parameter	Method	Reported Value	DF	Units	RL	Batch	Date Analyzed	Time Analyzed
Antimony	EPA 200.8	ND	10.4	mg/L	0.0052	040907A	04/09/07	15:37
Arsenic	EPA 200.8	ND	10.4	mg/L	0.0052	040907A	04/09/07	15:37
Barium	EPA 200.7	ND	1.04	mg/L	0.300	040607B	04/06/07	15:22
Beryllium	EPA 200.8	ND	10.4	mg/L	0.0052	040907A	04/09/07	15:37
Cadmium	EPA 200.8	ND	10.4	mg/L	0.0052	040907A	04/09/07	15:37
Chromium	EPA 200.7	ND	1.04	mg/L	0.0010	040907A	04/09/07	15:32
Cobalt	EPA 200.8	ND	10.4	mg/L	0.0052	040907A	04/09/07	15:37
Copper	EPA 200.8	ND	10.4	mg/L	0.0100	040907A	04/09/07	15:37
Lead	EPA 200.8	ND	10.4	mg/L	0.0052	040907A	04/09/07	15:37
Mercury	EPA 245.1	ND	1.00	mg/L	0.00020	04HG07Aa	04/12/07	14:56
Molybdenum	EPA 200.8	0.104	10.4	mg/L	0.0052	040907A	04/09/07	15:37
Nickel	EPA 200.7	ND	1.04	mg/L	0.0200	040607B	04/06/07	15:22
Selenium	EPA 200.8	0.0216	10.4	mg/L	0.0052	040907A	04/09/07	15:37
Silver	EPA 200.8	0.0199	10.4	mg/L	0.0052	040907A	04/09/07	15:37
Thallium	EPA 200.8	ND	10.4	mg/L	0.0052	040907A	04/09/07	15:37
Vanadium	EPA 200.8	ND	10.4	mg/L	0.0052	040907A	04/09/07	15:37
Zinc	EPA 200.7	ND	1.04	mg/L	0.0200	040607B	04/06/07	15:22

ND: Not detected, or below limit of detection.

DF: Dilution factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

020

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964807

Rec'd 04/04/07  
s2/c 964807

TRUESDAIL LABORATORIES, INC.  
14201 Franklin Avenue, Tustin, CA 92780-7008  
(714) 730-6239 FAX: (714) 730-6462  
www.truesdail.com

## CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-093]

COC Number

10 Days

TURNAROUND TIME

DATE 4-4-07 PAGE 1 OF 1

COMPANY E2  
PROJECT NAME PG&E Topock  
PHONE (530) 229-3303 FAX (530) 339-3303  
ADDRESS 155 Grand Ave Ste 1000  
Oakland, CA 94612  
P.O. NUMBER 346129.IM.02.00 TEAM 1  
SAMPLERS (SIGNATURE) *[Signature]*

COMPANY	E2																COMMENTS		
PROJECT NAME	PG&E Topock																		
PHONE	(530) 229-3303			FAX (530) 339-3303															
ADDRESS	155 Grand Ave Ste 1000																		
	Oakland, CA 94612																		
P.O. NUMBER	346129.IM Q2.00			TEAM 1															
SAMPLERS (SIGNATURE)																			

For Sample Conditions  
See Form Attached

ALERT!!

Level III QC

## CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	Printed Name	Company/Agency	Date/Time
<i>[Signature]</i>	Joe Ade	Omni	4-4-07 1240
Signature (Received)	Printed Name	Company/Agency	Date/Time
<i>[Signature]</i>	Dave Blackman	TCL	4-4-07 2305
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time
<i>[Signature]</i>			
Signature (Received)	Printed Name	Company/Agency	Date/Time
<i>[Signature]</i>			
Signature (Relinquished)	Printed Name	Company/Agency	Date/Time
<i>[Signature]</i>			
Signature (Received)	Printed Name	Company/Agency	Date/Time
<i>[Signature]</i>			

## SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ °FCUSTODY SEALED YES ☐ NO ☐

## SPECIAL REQUIREMENTS:



# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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April 27, 2007

E2 Consulting Engineers, Inc.  
Mr. Shawn Duffy  
155 Grand Ave., Suite 1000  
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-094 PROJECT, GROUNDWATER  
MONITORING,  
TLI NO.: 965093

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-094 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, Total Dissolved Solids, and Total Organic Carbon. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on April 12, 2007, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Results for Hexavalent Chromium by EPA 218.6 are reported in the matrix spike calculations although they are below the reporting limit due to the small amount of Hexavalent Chromium present in the samples.

No violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

Mona Nassimi  
Manager, Analytical Services

K.R.P. Iyer  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

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**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

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TUSTIN, CALIFORNIA 92780-7008  
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[www.truesdail.com](http://www.truesdail.com)

**Laboratory No.:** 965093

**Date:** April 27, 2007

**Collected:** April 12, 2007

**Received:** April 12, 2007

## ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Tina Acquiati
SM 4500-H B	pH	Tina Acquiati
SM 2540C	Total Dissolved Solids	Tina Acquiati
EPA 180.1	Turbidity	Gautam Savani
SM 5310C	Total Organic Carbon	Hope Trinidad
EPA 200.8	Total Chromium	Michel Mendoza
EPA 218.6	Hexavalent Chromium	Jean-Paul Gleeson

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## REPORT

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Client: E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

Attention: Shawn Duffy

Laboratory No.: 965093

Sample: Two (2) Groundwater Samples  
Project Name: PG&E Topock Project  
Project No.: 346129.IM.02.E2  
P.O. No.: 346129.IM.02.E2  
Prep. Batch: 042607A

Date: May 8, 2007  
Collected: April 12, 2007  
Received: April 12, 2007  
Prep/ Analyzed: April 26, 2007  
Analytical Batch: 042607A  
Revision 1

Investigation: Total Chromium by Inductively Coupled Argon Plasma Mass Spectrometer  
using EPA 200.8

### Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
965093-1	SC-700B-WDR-094	mg/L	EPA 200.8	12:56	1.00	0.0010	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965247	ND	ND	0.00%	≤20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	965247	0.00	1.00	0.0500	0.0500	0.0442	0.0500	88.4%	70-130%	Yes

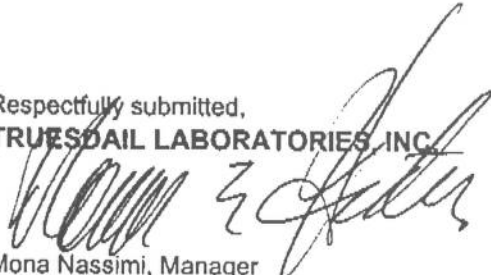
QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCQS	0.0994	0.100	99.4%	90% - 110%	Yes
MRCVS#1	0.108	0.100	108%	90% - 110%	Yes
ICS	0.109	0.100	109%	80% - 120%	Yes
LCS	0.107	0.100	107%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

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## REPORT

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Client: E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

Attention: Shawn Duffy

Laboratory No.: 965093

Sample: Two (2) Groundwater Samples  
Project Name: PG&E Topock Project  
Project No.: 346129.IM.02.E2  
P.O. No.: 346129.IM.02.E2

Date: April 27, 2007  
Collected: April 12, 2007  
Received: April 12, 2007  
Prep/ Analyzed: April 12, 2007  
Analytical Batch: 04CrH07N

Investigation:

Hexavalent Chromium by EPA 218.6

### Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
965093-1	SC-700B-WDR-094	13:00	20:50	mg/L	5.00	0.0010	ND

### QA/QC Summary

QC STD I.D.		Laboratory Number		Concentration		Duplicate Concentration		Relative Percent Difference		Acceptance limits		QC Within Control	
Duplicate		965093-1		ND		ND		0.00%		< 20%		Yes	

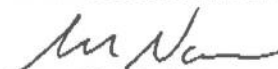
QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	965093-1	0.00	1.06	0.00100	0.00106	0.00122	0.00106	115%	90-110%	No
MS	965093-1	0.00020	5.00	0.00100	0.00500	0.00525	0.00520	101%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00512	0.00500	102%	90% - 110%	Yes
MRCVS#1	0.0100	0.0100	100%	95% - 105%	Yes
LCS	0.00511	0.00500	102%	90% - 110%	Yes
LCSD	0.00515	0.00500	103%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

008

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## REPORT

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**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

**P.O. No.:** 346129.IM.02.E2

**Laboratory No.:** 965093

**Date:** April 27, 2007

**Collected:** April 12, 2007

**Received:** April 12, 2007

**Prep/ Analyzed:** April 12, 2007

**Analytical Batch:** 04TUC07N

**Investigation:**

**Turbidity by Method EPA 180.1**

### Analytical Results Turbidity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
965093-1	SC-700B-WDR-094	13:00	NTU	1.00	0.100	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965070-5	0.705	0.703	0.28%	≤ 20%	Yes


  

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.58	8.00	94.8%	90% - 110%	Yes
LCS	7.60	8.00	95.0%	90% - 110%	Yes
LCS	7.72	8.00	96.5%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

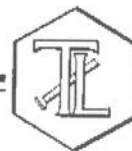
  
Mona Nassimi, Manager  
Analytical Services

009

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## REPORT

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www.truesdail.com

**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples  
**Project Name:** PG&E Topock Project  
**Project No.:** 346129.IM.02.E2  
**P.O. No.:** 346129.IM.02.E2

**Laboratory No.:** 965093

**Date:** April 27, 2007

**Collected:** April 12, 2007

**Received:** April 12, 2007

**Prep/ Analyzed:** April 13, 2007

**Analytical Batch:** 04PH07L

**Investigation:**

pH by SM 4500-H B

### Analytical Results pH

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
965093-1	SC-700B-WDR-094	13:00	07:38	pH Units	0.0570	2.00	8.07

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance Limits	QC Within Control
Duplicate	965094	7.71	7.72	0.01	+ 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.05	7.00	0.05	+ 0.100 Units	Yes
LCS #1	7.02	7.00	0.02	+ 0.100 Units	Yes

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

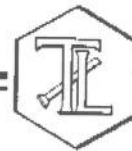
  
Mona Nassimi, Manager  
Analytical Services

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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## REPORT

14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 • FAX (714) 730-6462  
www.truesdail.com

**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples  
**Project Name:** PG&E Topock Project  
**Project No.:** 346129.IM.02.E2  
**P.O. No.:** 346129.IM.02.E2

**Laboratory No.:** 965093

**Date:** April 27, 2007  
**Collected:** April 12, 2007  
**Received:** April 12, 2007  
**Prep/ Analyzed:** April 13, 2007  
**Analytical Batch:** 04EC07G

### Investigation:

**Specific Conductivity by EPA 120.1**

### Analytical Results Specific Conductivity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
965093-1	SC-700B-WDR-094	µmhos/cm	EPA 120.1	1.00	2.00	6400

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965093-1	6400	6420	0.31%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	688	706	97.5%	90% - 110%	Yes
CVS#1	945	1000	94.5%	90% - 110%	Yes
LCS	687	706	97.3%	90% - 110%	Yes

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

**P.O. No.:** 346129.IM.02.E2

**Laboratory No.:** 965093

**Date:** April 27, 2007

**Collected:** April 12, 2007

**Received:** April 12, 2007

**Prep/ Analyzed:** April 17, 2007

**Analytical Batch:** 04TDS07H

**Investigation:**

**Total Dissolved Solids by SM 2540C**

## Analytical Results Total Dissolved Solids

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>RL</u>	<u>Results</u>
965093-1	SC-700B-WDR-094	mg/L	EPA 160.1	139	3790

## QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	965093	3790	3800	0.13%	≤ 5%	Yes


  

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	492	500	98.4%	90% - 110%	Yes
LCS 2	497	500	99.4%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples  
**Project Name:** PG&E Topock Project  
**Project No.:** 346129.IM.02.E2  
**P.O. No.:** 346129.IM.02.E2  
**Prep. Batch:** 04TOC07F

**Laboratory No.:** 965093

**Date:** April 27, 2007  
**Collected:** April 12, 2007  
**Received:** April 12, 2007  
**Prep/ Analyzed:** April 27, 2007  
**Analytical Batch:** 04TOC07F

**Investigation:**

**Total Organic Carbon by SM 5310C**

### Analytical Results Total Organic Carbon

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>Run Time</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
965093-2	SC-100B-WDR-094	mg/L	EPA 415.2	21:56	1.00	0.300	0.525

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance Limits	QC Within Control
Duplicate	965093-2	0.525	0.540	2.82%	≤20%	Yes


QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	965462	5.47	1.00	20.0	20.0	25.7	25.5	101%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	9.39	10.0	93.9%	90% - 110%	No
MRCVS#1	10.6	10.0	106%	90% - 110%	Yes
MRCVS#2	10.7	10.0	107%	90% - 110%	Yes
LCS	19.4	20.0	97.0%	90% - 110%	Yes
LCSD	19.9	20.0	99.5%	90% - 110%	Yes

**ND:** Not detected at reporting limit

**DF:** Dilution Factor

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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14201 Franklin Avenue, Tustin, CA 92780-7008  
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# CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-094]

COC Number

TURNAROUND TIME 10 Days

DATE 4-12-07 PAGE 1 OF 1

965093

COMPANY E2  
PROJECT NAME PG&E Topock  
PHONE (530) 229-3303 FAX (530) 339-3303  
ADDRESS 155 Grand Ave Ste 1000  
Oakland, CA 94612  
P.O. NUMBER 346129.IM.02.00 TEAM 1  
SAMPLERS (SIGNATURE)

SAMPLE I.D.	DATE	TIME	DESCRIPTION	NUMBER OF CONTAINERS										COMMENTS
				1	2	3	4	5	6	7	8	9	10	
SC-700B-WDR-094	4-12-07	1300	Groundwater											
				X										
				(1005)										
				(7008)										
				TOTAL NUMBER OF CONTAINERS										

Rec'd 04/12/07  
Lab 965093

CR6 (218.6) Lab Filtered  
Total Metals (200.7) Total Chromium  
Specific Conductance (120.7)  
pH (750.7)  
TDS (760.7)  
Turbidity (180.7)  
TOC (415.2)

ALERT!!  
Level III QC

For Sample Conditions  
See Form Attached

RUSH

049

## CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)	Printed Name Erik Johnson	Company/ Agency PG&E/ONI	Date/ Time 4-12-07 1500
Signature (Received)	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	Printed Name Joe Ape	Company/ Agency O&E	Date/ Time 4-12-07 1500
Signature (Received)	Printed Name Hashemi	Company/ Agency T.L.I.	Date/ Time 4-12-07 1420
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time
Signature (Received)	Printed Name	Company/ Agency	Date/ Time

### SAMPLE CONDITIONS

RECEIVED COOL ☐ WARM ☐ °F

CUSTODY SEALED YES ☐ NO ☐

### SPECIAL REQUIREMENTS:

# TRUESDAIL LABORATORIES, INC.

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May 2, 2007

E2 Consulting Engineers, Inc.  
Mr. Shawn Duffy  
155 Grand Ave., Suite 1000  
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-095 PROJECT, GROUNDWATER  
MONITORING,  
TLI No.: 965247

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-095 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, Total Dissolved Solids, and Total Organic Carbon. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on April 18, 2007, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

The sample I.D. for 965247-2 is reported as SC-100B-WDR-095 per Mr. Shawn Duffy's request.

Due to instrument problems, the sample for Total Chromium analysis was analyzed by method EPA 200.8 rather than EPA 200.7 as requested on the chain of custody.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

Mona Nassimi  
Manager, Analytical Services

K.R.P. Iyer  
Quality Assurance/Quality Control Officer

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**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

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TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
www.truesdail.com

**Laboratory No.:** 965247

**Date:** May 2, 2007

**Collected:** April 18, 2007

**Received:** April 18, 2007

## ANALYST LIST

METHOD	PARAMETER	ANALYST
EPA 120.1	Specific Conductivity	Tina Acquiati
SM 4500-H B	pH	Tina Acquiati
SM 2540C	Total Dissolved Solids	Tina Acquiati
EPA 180.1	Turbidity	Gautam Savani
SM 5310C	Total Organic Carbon	Hope Trinidad
EPA 200.8	Total Chromium	Michel Mendoza
EPA 218.6	Hexavalent Chromium	Jean-Paul Gleeson

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Client: E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwater Samples  
Project Name: PG&E Topock Project  
Project No.: 346129.IM.02.E2  
P.O. No.: 346129.IM.02.E2  
Prep. Batch: 042607A

Laboratory No.: 965247

Date: May 8, 2007  
Collected: April 18, 2007  
Received: April 18, 2007  
Prep/ Analyzed: April 26, 2007  
Analytical Batch: 042607A  
Revision 1

Investigation: **Total Chromium by Inductively Coupled Argon Plasma Mass Spectrometer  
using EPA 200.8**

### Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
965247-1	SC-700B-WDR-095	mg/L	EPA 200.8	14:44	1.00	0.0010	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965247-1	ND	ND	0.00%	≤20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	965247-1	0.00	1.00	0.0500	0.0500	0.0442	0.0500	88.4%	70-130%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.0994	0.100	99.4%	90% - 110%	Yes
MRCVS#1	0.108	0.100	108%	90% - 110%	Yes
ICS	0.109	0.100	109%	80% - 120%	Yes
LCS	0.107	0.100	107%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

Mona Nassimi, Manager  
Analytical Services

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## REPORT

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155 Grand Ave. Suite 1000  
Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwater Samples  
Project Name: PG&E Topock Project  
Project No.: 346129.IM.02.E2  
P.O. No.: 346129.IM.02.E2

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TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
www.truesdail.com

Laboratory No.: 965247

Date: May 2, 2007  
Collected: April 18, 2007  
Received: April 18, 2007  
Prep/ Analyzed: April 19, 2007  
Analytical Batch: 04CrH07R

Investigation:

Hexavalent Chromium by EPA 218.6

### Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
965247-1	SC-700B-WDR-095	12:25	07:14	mg/L	1.05	0.00020	ND

### QA/QC Summary

QC STD I.D.		Laboratory Number		Concentration		Duplicate Concentration		Relative Percent Difference		Acceptance limits		QC Within Control	
Duplicate		965247-1		ND		ND		0.00%		< 20%		Yes	

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	965247-1	0.00	1.06	0.00100	0.00106	0.00108	0.00106	102%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00502	0.00500	100%	90% - 110%	Yes
MRCVS#1	0.0101	0.0100	101%	95% - 105%	Yes
LCS	0.00504	0.00500	101%	90% - 110%	Yes
LCSD	0.00503	0.00500	101%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

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**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

**P.O. No.:** 346129.IM.02.E2

**Laboratory No.:** 965247

**Date:** May 2, 2007

**Collected:** April 18, 2007

**Received:** April 18, 2007

**Prep/ Analyzed:** April 19, 2007

**Analytical Batch:** 04TUC07Q

**Investigation:**

**Turbidity by Method EPA 180.1**

### Analytical Results Turbidity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
965247-1	SC-700B-WDR-095	12:25	NTU	1.00	0.100	ND

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965239-7	0.113	0.114	0.88%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	8.02	8.00	100%	90% - 110%	Yes
LCS	8.23	8.00	103%	90% - 110%	Yes
LCS	7.90	8.00	98.8%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples  
**Project Name:** PG&E Topock Project  
**Project No.:** 346129.IM.02.E2  
**P.O. No.:** 346129.IM.02.E2

**Laboratory No.:** 965247

**Date:** May 2, 2007

**Collected:** April 18, 2007

**Received:** April 18, 2007

**Prep/ Analyzed:** April 19, 2007

**Analytical Batch:** 04PH07Q

**Investigation:**

pH by SM 4500-H B

### Analytical Results pH

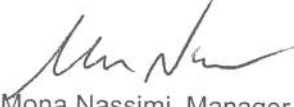
<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
965247-1	SC-700B-WDR-095	12:25	10:10	pH Units	0.0570	2.00	7.83

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance limits	QC Within Control
Duplicate	965247	7.83	7.83	0.00	± 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.00	7.00	0.00	± 0.100 Units	Yes
LCS #1	7.06	7.00	0.06	± 0.100 Units	Yes

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

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**Sample:** Two (2) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

**P.O. No.:** 346129.IM.02.E2

**Laboratory No.:** 965247

**Date:** May 2, 2007

**Collected:** April 18, 2007

**Received:** April 18, 2007

**Prep/ Analyzed:** April 19, 2007

**Analytical Batch:** 04EC07I

**Investigation:**

**Specific Conductivity by EPA 120.1**

### Analytical Results Specific Conductivity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
965247-1	SC-700B-WDR-095	µmhos/cm	EPA 120.1	1.00	2.00	6350

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965247	6350	6370	0.31%	≤ 10%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
CCS	692	706	98.0%	90% - 110%	Yes
CVS#1	945	1000	94.5%	90% - 110%	Yes
LCS	690	706	97.7%	90% - 110%	Yes

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

011

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

## REPORT

**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** Two (2) Groundwater Samples

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

**P.O. No.:** 346129.IM.02.E2

14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
www.truesdail.com

**Laboratory No.:** 965247

**Date:** May 2, 2007

**Collected:** April 18, 2007

**Received:** April 18, 2007

**Prep/ Analyzed:** April 19, 2007

**Analytical Batch:** 04TDS07J

**Investigation:**

**Total Dissolved Solids by SM 2540C**

### Analytical Results Total Dissolved Solids

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>RL</u>	<u>Results</u>
965247-1	SC-700B-WDR-095	mg/L	EPA 160.1	139	3810

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	965247	3810	3770	0.53%	≤ 5%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	497	500	99.4%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager  
Analytical Services

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# TRUESDAIL LABORATORIES, INC.

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## REPORT

Client: E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

Attention: Shawn Duffy

Sample: Two (2) Groundwater Samples  
Project Name: PG&E Topock Project  
Project No.: 346129.IM.02.E2  
P.O. No.: 346129.IM.02.E2  
Prep. Batch: 04TOC07C

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TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
www.truesdail.com

Laboratory No.: 965247

Date: May 2, 2007  
Collected: April 18, 2007  
Received: April 18, 2007  
Prep/ Analyzed: April 19, 2007  
Analytical Batch: 04TOC07C

Investigation:

Total Organic Carbon by SM 5310C

### Analytical Results Total Organic Carbon

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
965247-2	SC-100B-WDR-095	mg/L	EPA 415.2	15:33	1.00	0.300	0.349

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965247	0.349	0.365	4.48%	≤20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	965230	5.30	1.00	10.0	10.0	16.1	15.3	108%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	9.31	10.0	93.1%	90% - 110%	No
MRCVS#1	10.4	10.0	104%	90% - 110%	Yes
MRCVS#2	10.8	10.0	108%	90% - 110%	Yes
LCS	19.8	20.0	99.0%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

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# 965247


**TRUESDAIL LABORATORIES, INC.**  
 14201 Franklin Avenue, Tustin, CA 92780-7008  
 (714) 730-6239 FAX: (714) 730-6462  
 www.truesdail.com

## CHAIN OF CUSTODY RECORD

[IM3]Plant-WDR-095]

COC Number

TURNAROUND TIME 10 Days

DATE 4-18-07 PAGE 1 OF 1

COMPANY E2 PROJECT NAME PG&E Topock PHONE (530) 229-3303 FAX (530) 339-3303 ADDRESS 155 Grand Ave Ste 1000 Oakland, CA 94612 P.O. NUMBER 346129 IM.02.00 TEAM 1 SAMPLERS (SIGNATURE) <i>David Chaney</i>		DATE 4-18-07 TIME 1225 DESCRIPTION Groundwater SAMPLE I.D. SC-700B-WDR-095 210C-100B-095		CR6 (218.6) Lab Filtered x Total Metals (200.7) Total Chromium x Specific Conductance (120.7) x PH (150.7) x TDS (160.7) x Turbidity (180.7) x		Rec'd 04/18/07 965247		COMMENTS NUMBER OF CONTAINERS 3 pH=2 TOTAL NUMBER OF CONTAINERS 3	
--	--	---	--	---	--	--------------------------	--	--	--

For Sample Conditions  
See Form Attached

ALERT!!  
Level III QC

CHAIN OF CUSTODY SIGNATURE RECORD			
Signature (Relinquished)	Printed Name David Chaney	Company/ Agency CH2M Hill	Date/ Time 4-18-07 15:30
Signature (Received)	Printed Name David S	Company/ Agency TLF	Date/ Time 4/18/07 1945
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time
Signature (Received)	Printed Name	Company/ Agency	Date/ Time
Signature (Relinquished)	Printed Name	Company/ Agency	Date/ Time
Signature (Received)	Printed Name	Company/ Agency	Date/ Time

SAMPLE CONDITIONS			
RECEIVED	COOL	WARM	°F
CUSTODY SEALED	YES	NO	
SPECIAL REQUIREMENTS:			

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[www.truesdail.com](http://www.truesdail.com)

May 7, 2007

E2 Consulting Engineers, Inc.  
Mr. Shawn Duffy  
155 Grand Ave., Suite 1000  
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-36, GROUNDWATER MONITORING  
PROJECT, TLI NO.: 965541

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-36 groundwater-monitoring project for Total Chromium, Hexavalent Chromium, and pH. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data, and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data are under Section 5.

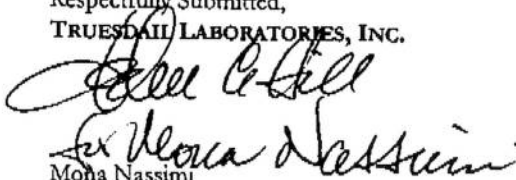
The samples were received and delivered with the chain of custody on April 29, 2007, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

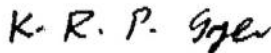
Due to instrument problems, the sample for Total Chromium analysis was analyzed by method SW 6020 rather than SW 6010B as requested on the chain of custody.

No other violations or non-conformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

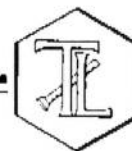
  
Mona Nassimi  
Manager, Analytical Services



K.R.P. Iyer  
Quality Assurance/Quality Control Officer

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## REPORT

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www.truesdail.com

**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

**P.O. No.:** 346129.IM.02.E2

**Prep. Batch:** 04CrH07Y

**Laboratory No.:** 965541

**Date:** May 7, 2007

**Collected:** April 28, 2007

**Received:** April 29, 2007

**Prep/ Analyzed:** April 29, 2007

**Analytical Batch:** 04CrH07Y

**Investigation:**

**Hexavalent Chromium by IC using SW 7199**

### Analytical Results Hexavalent Chromium

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	DF	RL	Results
965541	SC-702-04-28-07	23:45	06:00	mg/L	5.00	0.0010	0.0063

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965541	0.0063	0.0063	0.00%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	965541	0.0063	5.00	0.0100	0.0500	0.0576	0.0563	103%	85-115%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00514	0.00500	103%	90% - 110%	Yes
MRCVS#1	0.0105	0.0100	105%	90% - 110%	Yes
LCS	0.00512	0.00500	102%	90% - 110%	Yes
LCSD	0.00513	0.00500	103%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

*Mona Nassimi*  
Mona Nassimi, Manager  
Analytical Services

006

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**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

**P.O. No.:** 346129.IM.02.E2

**Prep. Batch:** 042907A

**Laboratory No.:** 965541

**Date:** May 7, 2007

**Collected:** April 28, 2007

**Received:** April 29, 2007

**Prep/ Analyzed:** April 29, 2007

**Analytical Batch:** 042907A

**Investigation:** Total Chromium by Inductively Coupled Argon Plasma Mass Spectrometer  
using SW 6020

### Analytical Results Total Chromium

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
965541	SC-702-04-28-07	23:45	08:08	mg/L	1.00	0.0010	0.0090

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965541	0.0090	0.0080	11.8%	≤ 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	965541	0.0090	1.00	0.0500	0.0500	0.0521	0.0590	86.2%	75-125%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.105	0.100	105%	90% - 110%	Yes
MRCVS#1	0.102	0.100	102%	90% - 110%	Yes
ICS	0.103	0.100	103%	80% - 120%	Yes
LCS	0.0988	0.100	98.8%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,

TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

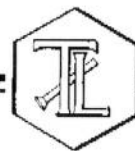
007

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## REPORT

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www.truesdail.com

Client: E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample

Project Name: PG&E Topock Project

Project No.: 346129.IM.02.E2

P.O. No.: 346129.IM.02.E2

Laboratory No.: 965541

Date: May 7, 2007

Collected: April 28, 2007

Received: April 29, 2007

Prep/ Analyzed: April 29, 2007

Analytical Batch: 04PH07AF

Investigation:

pH by SM 4500-H B

### Analytical Results pH

TLI I.D.	Field I.D.	Sample Time	Run Time	Units	RL	Results
965541	SC-702-04-28-07	23:45	05:40	pH Units	2.00	7.21

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance Limits	QC Within Control
Duplicate	965541	7.21	7.25	0.04	+ 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.00	7.00	0.00	+ 0.100 Units	Yes
LCS #1	7.06	7.00	0.06	+ 0.100 Units	Yes

ND: Below the reporting limit (Not Detected).  
DF: Dilution Factor.

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

*[Signature]*  
Mona Nassimi, Manager  
Analytical Services

008

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www.truesdail.com

May 7, 2007

E2 Consulting Engineers, Inc.  
Mr. Shawn Duffy  
155 Grand Ave., Suite 1000  
Oakland, California 94612

Dear Mr. Duffy:

SUBJECT: CASE NARRATIVE PG&E TOPOCK IM3PLANT-WDR-096 PROJECT, GROUNDWATER  
MONITORING,  
TLI NO.: 965574

Truesdail Laboratories, Inc. is pleased to submit this report summarizing the Topock IM3Plant-WDR-096 project groundwater monitoring for Hexavalent and Total Chromium, Turbidity, Specific Conductivity, pH, and Total Dissolved Solids. A summary table for this sample delivery group is included in Section 2. Complete laboratory reports, quality control data and chain of custody forms for sampling period are included in Sections 3 and 4. Analytical raw data have been included under Section 5.

The samples were received and delivered with the chain of custody on April 30, 2007, intact and in chilled condition. The samples will be kept in a locked refrigerator for 30 days; thereafter it will be kept in warm storage for an additional 2 months before disposal.

Results for Hexavalent Chromium by EPA 218.6 are reported in the matrix spike calculations although they are below the reporting limit due to the small amount of Hexavalent Chromium present in the samples.

Due to instrument problems, the sample for Total Chromium analysis was analyzed by method EPA 200.8 rather than EPA 200.7 as requested on the chain of custody.

No other violations or nonconformance actions occurred for this data package.

If you have any questions or require additional information, please contact me at (714) 730-6239 ext. 200.

Respectfully Submitted,  
TRUESDAIL LABORATORIES, INC.

Mona Nassimi  
Manager, Analytical Services

K.R.P. Iyer  
Quality Assurance/Quality Control Officer

# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



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**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

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TUSTIN, CALIFORNIA 92780-7008  
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**Laboratory No.:** 965574

**Date:** May 8, 2007

**Collected:** April 30, 2007

**Received:** April 30, 2007

## ANALYST LIST

TEST	ANALYSIS	ANALYST
EPA 120.1	Specific Conductivity	Tina Acquiati
SM 4500-H B	pH	Tina Acquiati
SM 2540C	Total Dissolved Solids	Tina Acquiati
EPA 180.1	Turbidity	Gautam Savani
EPA 200.8	Total Chromium	Michel Mendoza
EPA 218.6	Hexavalent Chromium	Jean-Paul Gleeson

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## REPORT

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www.truesdail.com

Client: E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

Attention: Shawn Duffy

Laboratory No.: 965574

Sample: One (1) Groundwater Sample  
Project Name: PG&E Topock Project  
Project No.: 346129.IM.02.E2  
P.O. No.: 346129.IM.02.E2  
Prep. Batch: 050207A

Date: May 8, 2007  
Collected: April 30, 2007  
Received: April 30, 2007  
Prep/ Analyzed: May 2, 2007  
Analytical Batch: 050207A  
Revision 1

Investigation: Total Chromium by Inductively Coupled Argon Plasma Mass Spectrometer  
using EPA 200.8

### Analytical Results Total Chromium

TLI I.D.	Field I.D.	Units	Method	Run Time	DF	RL	Results
965574	SC-700B-WDR-096	mg/L	EPA 200.8	15:43	1.00	0.0010	0.0021

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965574	0.0021	0.0018	15.4%	≤20%	Yes


QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	965574	0.0021	1.00	0.0500	0.0500	0.0484	0.0521	92.6%	70-130%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.102	0.100	102%	90% - 110%	Yes
MRCVS#1	0.0978	0.100	97.8%	90% - 110%	Yes
MRCVS#2	0.101	0.100	101%	90% - 110%	Yes
ICS	0.104	0.100	104%	80% - 120%	Yes
LCS	0.101	0.100	101%	90% - 110%	Yes

ND: Not detected at reporting limit

DF: Dilution Factor

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

  
Mona Nassimi, Manager  
Analytical Services

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**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Laboratory No.:** 965574

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 346129.IM.02.E2  
**P.O. No.:** 346129.IM.02.E2

**Date:** May 7, 2007  
**Collected:** April 30, 2007  
**Received:** April 30, 2007  
**Prep/ Analyzed:** May 1, 2007  
**Analytical Batch:** 05CrH07A

**Investigation:**

**Hexavalent Chromium by EPA 218.6**

### Analytical Results Hexavalent Chromium

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
965574	SC-700B-WDR-096	13:00	05:00	mg/L	5.00	0.0010	ND

### QA/QC Summary

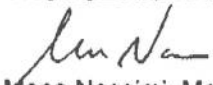
QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965574	ND	ND	0.00%	< 20%	Yes

QC Std I.D.	Lab Number	Conc. of unspiked sample	Dilution Factor	Added Spike Conc.	MS Amount	Measured Conc. of spiked sample	Theoretical Conc. of spiked sample	MS% Recovery	Acceptance limits	QC Within Control
MS	965574	0.00037	5.00	0.00100	0.00500	0.00529	0.00537	98.4%	90-110%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
MRCCS	0.00506	0.00500	101%	90% - 110%	Yes
MRCVS#1	0.0103	0.0100	103%	95% - 105%	Yes
MRCVS#2	0.0103	0.0100	103%	95% - 105%	Yes
MRCVS#3	0.0104	0.0100	104%	95% - 105%	Yes
MRCVS#4	0.0104	0.0100	104%	95% - 105%	Yes
MRCVS#5	0.0103	0.0100	103%	95% - 105%	Yes
LCS	0.00505	0.00500	101%	90% - 110%	Yes
LCSD	0.00503	0.00500	101%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).  
DF: Dilution Factor.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

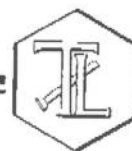
  
Mona Nassimi, Manager  
Analytical Services

007

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

## REPORT

14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 • FAX (714) 730-6462  
www.truesdail.com

**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

**P.O. No.:** 346129.IM.02.E2

**Laboratory No.:** 965574

**Date:** May 7, 2007

**Collected:** April 30, 2007

**Received:** April 30, 2007

**Prep/ Analyzed:** May 1, 2007

**Analytical Batch:** 05TUC07A

**Investigation:**

**Turbidity by Method EPA 180.1**

### Analytical Results Turbidity

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Units</u>	<u>DF</u>	<u>RL</u>	<u>Results</u>
965574	SC-700B-WDR-096	13:00	NTU	1.00	0.100	ND

### QA/QC Summary


QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965564-4	1.48	1.49	0.67%	≤ 20%	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS	7.80	8.00	97.5%	90% - 110%	Yes
LCS	7.75	8.00	96.9%	90% - 110%	Yes
LCS	7.60	8.00	95.0%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

DF: Dilution Factor.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

008

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## REPORT

14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 • FAX (714) 730-6462  
www.truesdail.com

**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample  
**Project Name:** PG&E Topock Project  
**Project No.:** 346129.IM.02.E2  
**P.O. No.:** 346129.IM.02.E2

**Laboratory No.:** 965574

**Date:** May 7, 2007

**Collected:** April 30, 2007

**Received:** April 30, 2007

**Prep/ Analyzed:** May 1, 2007

**Analytical Batch:** 05PH07A

**Investigation:**

pH by SM 4500-H B

### Analytical Results pH

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Sample Time</u>	<u>Run Time</u>	<u>Units</u>	<u>MDL</u>	<u>RL</u>	<u>Results</u>
965574	SC-700B-WDR-096	13:00	09:43	pH Units	0.0570	2.00	8.06

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Difference (Units)	Acceptance Limits	QC Within Control
Duplicate	965574	8.06	8.06	0.00	+ 0.100 Units	Yes

QC Std I.D.	Measured Concentration	Theoretical Concentration	Difference (Units)	Acceptance Limits	QC Within Control
LCS	7.03	7.00	0.03	+ 0.100 Units	Yes
LCS #1	7.04	7.00	0.04	+ 0.100 Units	Yes
LCS #2	7.02	7.00	0.02	+ 0.100 Units	Yes

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

009

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

## REPORT

14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
www.truesdail.com

Client: E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

Attention: Shawn Duffy

Sample: One (1) Groundwater Sample  
Project Name: PG&E Topock Project  
Project No.: 346129.IM.02.E2  
P.O. No.: 346129.IM.02.E2

Laboratory No.: 965574

Date: May 7, 2007

Collected: April 30, 2007

Received: April 30, 2007

Prep/ Analyzed: May 2, 2007

Analytical Batch: 05EC07A

Investigation:

Specific Conductivity by EPA 120.1

### Analytical Results Specific Conductivity

TLI I.D.	Field I.D.	Units	Method	DF	RL	Results
965574	SC-700B-WDR-096	µmhos/cm	EPA 120.1	1.00	2.00	6740

### QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Relative Percent Difference	Acceptance limits	QC Within Control
Duplicate	965576-6	6980	6990	0.14%	≤ 10%	Yes
QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control	
CCS	694	706	98.3%	90% - 110%	Yes	
CVS#1	1340	1410	95.0%	90% - 110%	Yes	
LCS	692	706	98.0%	90% - 110%	Yes	

Respectfully submitted,  
TRUESDAIL LABORATORIES, INC.

Mona Nassimi, Manager  
Analytical Services

010

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# TRUESDAIL LABORATORIES, INC.

INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES



Established 1931

## REPORT

**Client:** E2 Consulting Engineers, Inc.  
155 Grand Ave. Suite 1000  
Oakland, CA 94612

**Attention:** Shawn Duffy

**Sample:** One (1) Groundwater Sample

**Project Name:** PG&E Topock Project

**Project No.:** 346129.IM.02.E2

**P.O. No.:** 346129.IM.02.E2

14201 FRANKLIN AVENUE  
TUSTIN, CALIFORNIA 92780-7008  
(714) 730-6239 · FAX (714) 730-6462  
www.truesdail.com

**Laboratory No.:** 965574

**Date:** May 7, 2007

**Collected:** April 30, 2007

**Received:** April 30, 2007

**Prep/ Analyzed:** May 2, 2007

**Analytical Batch:** 05TDS07C

**Investigation:**

**Total Dissolved Solids by SM 2540C**

## Analytical Results Total Dissolved Solids

<u>TLI I.D.</u>	<u>Field I.D.</u>	<u>Units</u>	<u>Method</u>	<u>RL</u>	<u>Results</u>
965574	SC-700B-WDR-096	mg/L	EPA 160.1	139	4030

## QA/QC Summary

QC STD I.D.	Laboratory Number	Concentration	Duplicate Concentration	Percent Difference	Acceptance limits	QC Within Control
Duplicate	965576-7	4200	4230	0.36%	≤ 5%	Yes

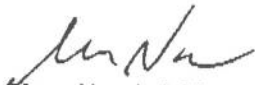
  

QC Std I.D.	Measured Concentration	Theoretical Concentration	Percent Recovery	Acceptance Limits	QC Within Control
LCS 1	498	500	99.6%	90% - 110%	Yes
LCS 2	503	500	101%	90% - 110%	Yes

ND: Below the reporting limit (Not Detected).

RL: Reporting Limit.

Respectfully submitted,  
**TRUESDAIL LABORATORIES, INC.**

  
Mona Nassimi, Manager  
Analytical Services

011

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14201 Franklin Avenue, Tustin, CA 92780-7008  
(714) 730-6239 FAX: (714) 730-6462  
www.truesdail.com

965574

# CHAIN OF CUSTODY RECORD

[IM3Plant-WDR-096]

COC Number

TURNAROUND TIME 5 Days

DATE 4-30-07 PAGE 1 OF 1

COMPANY	E2	PROJECT NAME	PG&E Topock	PHONE	(530) 229-3303	FAX	(530) 339-3303	ADDRESS	155 Grand Ave Ste 1000 Oakland, CA 94612	P.O. NUMBER	346129 IM.02.00	TEAM	1	SAMPLERS (SIGNATURE)		SAMPLE I.D.	SC-700B-WDR-096	DATE	4-30-07	TIME	13 00	DESCRIPTION	Groundwater									
																		CR6 (218.6) Lab Filtered	X	Total Metals (200.7) Total Chromium	X	Specific Conductance (120.1)	X	pH (150.1)	X	TDS (160.1)	X	Turbidity (180.1)	X			
																		NUMBER OF CONTAINERS				PH 2										
																		3				TOTAL NUMBER OF CONTAINERS				3						
																		COMMENTS														

Rec'd 04/30/07  
Lab # 65574

ALERT!!

Level III QC

For Sample Conditions  
See Form Attached

RUSH

031

## CHAIN OF CUSTODY SIGNATURE RECORD

Signature (Relinquished)		Printed Name	Eric J. Janssen	Company/Agency	CH2M HILL	Date/Time	4-30-07 15 00	SAMPLE CONDITIONS RECEIVED <input type="checkbox"/> COOL <input type="checkbox"/> WARM <input type="checkbox"/> °F AUSTODY SEALED YES <input type="checkbox"/> NO <input type="checkbox"/>
Signature (Received)		Printed Name	d. Janssen	Company/Agency	TH	Date/Time	4/30/07 15 00	
Signature (Relinquished)		Printed Name		Company/Agency		Date/Time		SPECIAL REQUIREMENTS:
Signature (Received)		Printed Name		Company/Agency		Date/Time		
Signature (Relinquished)		Printed Name		Company/Agency		Date/Time		
Signature (Received)		Printed Name		Company/Agency		Date/Time		



**DEPARTMENT OF HEALTH SERVICES**

**TITLE 22**

**96-HOUR ACUTE AQUATIC TOXICITY SCREEN**

**FATHEAD MINNOW (*Pimephales promelas*)**

**Prepared For:**

**Truesdall Laboratories, Inc.**

**Sample Identification:**

**964807-4**

**MBC Sample Number:**

**07-226**

**Prepared By:**

***MBC Applied Environmental Sciences***  
**3000 Redhill Avenue**  
**Costa Mesa, California 92626**

**April 2007**

## INDEX

	Section
CHAIN OF CUSTODY	1
COVER LETTER	2
SUMMARY OF TEST CONDITIONS	3
SAMPLE ANALYSIS DATA	4
WATER QUALITY / ORGANISM ENUMERATION DATA	6
ORGANISM LENGTH / WEIGHT DATA	7

## **CHAIN OF CUSTODY**



Date: 04/04/07 Page: 1 of 1  
Laboratory: MBC Applied Environmental Sciences  
Attention: Sonia M. Beck  
Address: 3000 Redhill Ave.  
City: Costa Mesa State: CA Zip: 92626-4524

Date: 04/04/07 Page: 1 of 1

**Laboratory: MBC Applied Environmental Sciences**

**Attention: Sonia M. Beck**

Address: 3000 Redhill Ave.

**City: Costa Mesa State: CA Zip: 92626-4524**

# ALERT!!

Level III OC

Please sign, date & return this form with the results, to:  
**TRUESDAIL LABORATORIES, INC.**

**Attn: Sean Condon**

14201 Franklin Avenue, Tustin, California 92780

**Please include Truesdail Sample ID on your invoice**

Sample ID	Date	Time	Matrix	Tests/Methods Required										Container Qty.	Comments/Container Type
				Acute Aquatic Toxicity, 96 hr Acute											
964807-4	4/4/07	12:15	Soil	X										1	Glass Jar 4 oz
															Level 3
														1	Containers Total

Type of Service:

☒ Normal (5-10 day IAT) ☐ RUSH (5 day IAT)☐ URGENT (24-48 hr. TAT)

☐ URGENT (24-48 hr. TAT) ☐ Results needed by:

### Sample Conditions:

Received on Ice? Yes/No

Sealed? Yes/No

**Special Shipment/Handling or Storage Requirements:**

**Relinquished by:**

Kabul Daily Bazar / Daily

1. **Introduction**  
 2. **Methodology**  
 3. **Results**  
 4. **Discussion**  
 5. **Conclusion**

**Signature**

Printed Name

**Company**

Date \_\_\_\_\_

1

Received by:

Printed Name Chia-Stephen Lim

Supra

1000

24111

1

2

4/5/07 4:30

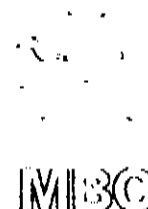
**COVER LETTER**

---

30 April 2007

Truesdail Laboratories, Inc.  
14201 Franklin Avenue  
Tustin, CA 92780

Attention: Sean Condon



Dear Mr. Condon:

The following are the results of the DOHS 96-hour Acute Aquatic Toxicity Screening test performed on the sample labeled **964807-4** sampled on **04/04/2007**.

The sample **PASSED** the DOHS 96-hour Acute Aquatic Toxicity Screening test. Currently, California Code of Regulations (CCR), Title 22, Section 66261.24, Article 6 requires wastes to pass the 96-hour aquatic toxicity testing with greater than 50% survival at the 500 mg/l. In addition to this regulation, the DOHS protocol requires wastes to pass the 96-hour aquatic toxicity testing with greater than 50% survival at the 500 mg/l concentration and 60% survival at the 750 mg/l concentration for compliance of hazardous waste declassification.

**MBC Sample Number 07-226 - Client Identification: 964807-4**

**PERCENT SURVIVAL**

Control	100%
250 mg/l	100%
500 mg/l	100%
750 mg/l	100%

LC50 > 750 mg/l

If you have any questions or require further information, please contact me at your convenience.

Cordially,

**MBC Applied Environmental Sciences**

A handwritten signature in black ink, appearing to read 'Sonja M. Beck'.

Sonja M. Beck  
Bioassay Manager

**MBC Applied Environmental Sciences**, 3000 Redhill Avenue, Costa Mesa, CA 92626



## **SUMMARY OF TEST CONDITIONS**

### Summary of Test Conditions for Acute Toxicity Test

---

Protocol:	Polisini 1988
Test Organism:	Fathead Minnow ( <i>Pimephales promelas</i> )
Test Type:	Static non-renewal
Temperature (°C):	20±1°C. Temperature should not deviate by more than 3°C during the test.
Photoperiod:	16-hours light, 8-hours dark
Water Quality Analyzer:	Hach HQ40d multi-parameter
Test Solution Volume:	6-Liters
Renewal of Test Solutions:	None
Age of Test Organisms:	Less than 90 days old
Percent Organisms dead in acclimatization tank:	< 1%
No. of Organisms/Test Chamber:	10
No. of Replicate Test Chambers/Test Concentration:	2
No. of Organisms/Test Concentration:	20
Feeding Regime:	None
Cleaning:	None
Aeration:	None, unless DO concentrations falls below 4.0 mg/L: rate should not exceed 100 bubbles/min.
Dilution Water:	Synthetic Soft Water
Test Concentrations:	250 mg/l, 500 mg/l, and 750 mg/l
Test Duration:	96 Hours
Endpoints:	LC <sub>50</sub>

---

Client : Truesdail Laboratories, Inc.

Date (Initial Sample): 04/04/2007

Sample Identification : 964807-4

Project Manager : Sean Condon

---

## **SAMPLE ANALYSIS**

---

## SAMPLE ANALYSIS

---

**CLIENT:** Truesdail Laboratories, Inc.

**SAMPLE IDENTIFICATION:** 964807-4

**MBC JOB #:** 07413X

**MBC SAMPLE #:** 07-226

---

**SAMPLE DATE/TIME:** 04/04/2007 1215

**DATE SAMPLE RECEIVED:** 04/05/2007

**ANALYSIS REQUIRED:** Title 22 DOHS 96-hour Acute Aquatic Toxicity Test

**ORGANISM REQUIRED:** Fathead minnow (*Pimephales promelas*)

**DATE/TIME INITIATED:** 04/20/2007 1650

**DATE/TIME TERMINATED:** 04/24/2007 1500

---

**AMOUNT OF SAMPLE:** Appx. 250 mls

**SAMPLE DESCRIPTION:** Brown Sludge

**SAMPLE PREPARATION:** Dilute w/ appx. 250 mls dilution water, shake for 6 hours.

**ADJUSTMENTS DURING ANALYSIS:** Air added at 0 hours.

**ANALYST(s):** Chris Lim, Sarah Winterrowd

---

Reviewed By: SB

**WATER QUALITY /  
ORGANISM ENUMERATION DATA**

---

# TITLE 22 DOHS 96-HOUR ACUTE AQUATIC TOXICITY TEST

CLIENT: Truesdail Laboratories, Inc.

SAMPLE IDENTIFICATION: 964807-4

SAMPLE DATE/TIME: 04/04/2007 1215

MBC Job #: 07413X

DATE/TIME INITIATED: 04/20/2007 1650

MBC Sample #: 07-226

DATE/TIME TERMINATED: 04/24/2007 1500

1	Control	7.6	8.4	19.6	10	7.3	7.5	21.9	10	7.7	7.4	22.4	10
2	250 mg/l	7.7	8.5	19.6	10	7.6	7.7	21.8	10	7.8	7.6	22.2	10
3	250 mg/l	7.7	8.6	19.8	10	7.5	7.6	21.8	10	7.8	7.6	22.3	10
4	500 mg/l	8.0	8.6	19.7	10	7.6	7.5	22.0	10	7.7	7.4	22.4	10
5	500 mg/l	8.0	8.6	19.7	10	7.7	7.7	21.8	10	7.8	7.6	22.4	10
6	750 mg/l	7.9	8.6	19.6	10	7.7	7.7	21.7	10	7.8	7.6	21.9	10
7	750 mg/l	7.8	8.6	19.7	10	7.7	7.7	21.6	10	7.8	7.6	21.9	10

1	Control	7.3	7.5	21.8	10	7.4	7.3	22.2	10
2	250 mg/l	7.7	7.7	21.9	10	7.7	7.6	22.1	10
3	250 mg/l	7.6	7.7	22.2	10	7.7	7.5	22.5	10
4	500 mg/l	7.5	7.3	22.4	10	7.5	7.1	22.5	10
5	500 mg/l	7.7	7.5	22.4	10	7.7	7.3	22.5	10
6	750 mg/l	7.8	7.5	22.0	10	7.8	7.4	22.1	10
7	750 mg/l	7.7	7.7	22.0	10	7.8	7.6	22.0	10

ORGANISM: Fathead minnow (*Pimephales promelas*)

ACCLIMATIZATION (20°C): 10 Days

NOTES: Normal test conditions.

## RESULTS:

Concentration

% Survival

RANGE:

Min.

Max.

pH Range:

DO Range:

Temp Range:

## ALKALINITY:

## HARDNESS:

0 HOURS

96 HOURS

0 HOURS

96 HOURS

Control:

30

31

Control:

45

49

750 mg/l:

65

70

750 mg/l:

80

83

Reviewed By: SB

# **ORGANISM LENGTH / WEIGHT DATA**

## ORGANISM LENGTH / WEIGHT DATA

**CLIENT:** Truesdail Laboratories, Inc.

**SAMPLE IDENTIFICATION:** 964807-4

**MBC JOB #:** 07413X

**MBC SAMPLE #:** 07-226

**ORGANISM:** Fathead minnow (*Pimephales promelas*)

1.	31	0.33	11.	30	0.41
2.	32	0.44	12.	35	0.55
3.	32	0.32	13.	32	0.42
4.	29	0.27	14.	30	0.33
5.	31	0.36	15.	35	0.51
6.	31	0.55	16.	31	0.37
7.	32	0.40	17.	32	0.40
8.	32	0.48	18.	33	0.47
9.	29	0.28	19.	29	0.33
10.	30	0.34	20.	32	0.44

	<u>Length (mm)</u>	<u>Weight (g)</u>
Average:	31	0.40
Maximum:	35	0.55
Minimum:	29	0.27

Technician: CL

Date: 04/24/2007

Reviewed By: 88





# STL

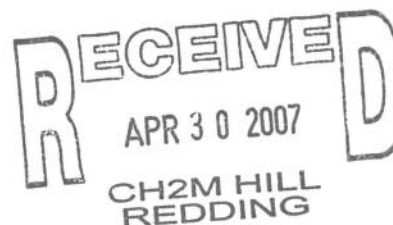
**STL Los Angeles**  
1721 South Grand Avenue  
Santa Ana, CA 92705

Tel: 714 258 8610 Fax: 714 258 0921  
www.stl-inc.com

April 24, 2007

STL LOT NUMBER: **E7D050290**

Priya Kumar / E2  
CH2M Hill Inc  
155 Grand Ave  
Suite 1000  
Oakland, CA 94612



Dear Ms. Kumar,

This report contains the analytical results for the sample received under chain of custody by STL Los Angeles on April 5, 2007. This sample is associated with your PG&E TOPOCK GWM project.

STL Los Angeles certifies that the test results provided in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of the report. NELAP Certification Number for STL Los Angeles is 01118CA / E87652.

Any matrix related anomaly is footnoted within the report. A cooler receipt temperature between 2-6 degrees Celsius is within EPA acceptance criteria. The temperature(s) of the cooler received for this project can be found on the Project Receipt Checklist. Historical control limits for the LCS are used to define the estimate of uncertainty for a method. All applicable quality control procedures met method-specified acceptance criteria.

The Analytical Report was provided on April 20, 2007.

This report shall not be reproduced except in full, without the written approval of the laboratory.

This report contains 000224 pages.

If you have any questions, please feel free to call me at (714) 258-8610.

Sincerely,

A handwritten signature in black ink, appearing to read "Marisol Tabirara". The signature is fluid and cursive, with the first name "Marisol" written in a larger, more prominent script than the last name "Tabirara".

Marisol Tabirara  
Project Manager

cc: Project File

$$T_{\text{err}} = 4.7 - 0.2 = 4.5$$

## METHOD / ANALYST SUMMARY

E7D050290

<u>ANALYTICAL METHOD</u>	<u>ANALYST</u>	<u>ANALYST ID</u>
MCAWW 160.3 MOD	Janice Salenga	403147
SW846 6010B	Josephine Asuncion	021088
SW846 7199	Yuriy Zakhrabov	000022
SW846 7471A	Hao Ton	000023

### References:

MCAWW	"Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.
SW846	"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

## CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-093

## TOTAL Metals

Lot-Sample #...: E7D050290-001

Matrix.....: SO

Date Sampled...: 04/04/07 12:20 Date Received...: 04/05/07 11:15

% Moisture.....: 64

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 7103339						
Arsenic	20	14	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AC
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Antimony	ND G	82	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AD
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Barium	82	27	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AE
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Cadmium	ND G	6.9	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AF
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Chromium	16000	14	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AG
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Beryllium	ND G	6.9	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AH
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Lead	ND G	6.9	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AJ
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Selenium	10	6.9	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AK
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Silver	ND G	14	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AL
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		

(Continued on next page)

## CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-093

## TOTAL Metals

Lot-Sample #...: E7D050290-001

Matrix.....: SO

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Cobalt	ND G	69	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AM
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Copper	ND G	34	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AN
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Molybdenum	ND G	55	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AP
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Nickel	ND G	55	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AQ
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Thallium	ND G	14	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AR
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Vanadium	95	69	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AT
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Zinc	31	27	mg/kg	SW846 6010B	04/16-04/19/07	JTE2V1AU
		Dilution Factor: 5		Analysis Time...: 20:49	Analyst ID.....: 021088	
		Instrument ID...: M01		MS Run #.....: 7103226		
Prep Batch #...	7103343					
Mercury	0.90	0.27	mg/kg	SW846 7471A	04/19/07	JTE2V1AV
		Dilution Factor: 1		Analysis Time...: 15:37	Analyst ID.....: 000023	
		Instrument ID...: M04		MS Run #.....: 7103227		

## NOTE(S) :

Results and reporting limits have been adjusted for dry weight.

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

## CH2M Hill Inc

Client Sample ID: SC-SLUDGE-WDR-093

## General Chemistry

Lot-Sample #...: E7D050290-001    Work Order #...: JTE2V    Matrix.....: SO  
Date Sampled...: 04/04/07 12:20    Date Received...: 04/05/07 11:15  
% Moisture.....: 64

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	110	5.5	mg/kg	SW846 7199	04/06/07	7096061

Dilution Factor: 5    Analysis Time...: 11:31    Analyst ID.....: 000022  
Instrument ID...: W18    MS Run #.....: 7096074

Percent Moisture	64	0.10	%	MCAWW 160.3 MOD	04/06-04/07/07	7096314
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Dilution Factor: 1    Analysis Time...: 07:10    Analyst ID.....: 4031474  
Instrument ID...: W15    MS Run #.....: 7096215

## NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.